

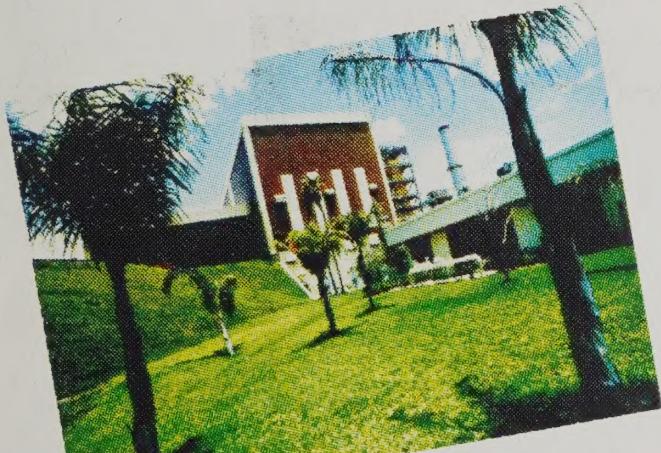
Findings and recommendations for meeting the region's solid waste needs through waste reduction, recycling, waste transformation and composting technologies and landfilling.

Solid Waste Task Force Report

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Leadership

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Leadership, vision and progress which promote economic growth, personal well-being, and livable communities for all Southern Californians.

The Association will accomplish this Mission by:

- ▲ Developing long-range regional plans and strategies that provide for efficient movement of people, goods and information; enhance economic growth and international trade; and improve the environment and quality of life.
- ▲ Providing quality information services and analysis for the region.
- ▲ Using an inclusive decision-making process that resolves conflicts and encourages trust.
- ▲ Creating an educational and work environment that cultivates creativity, initiative, and opportunity.

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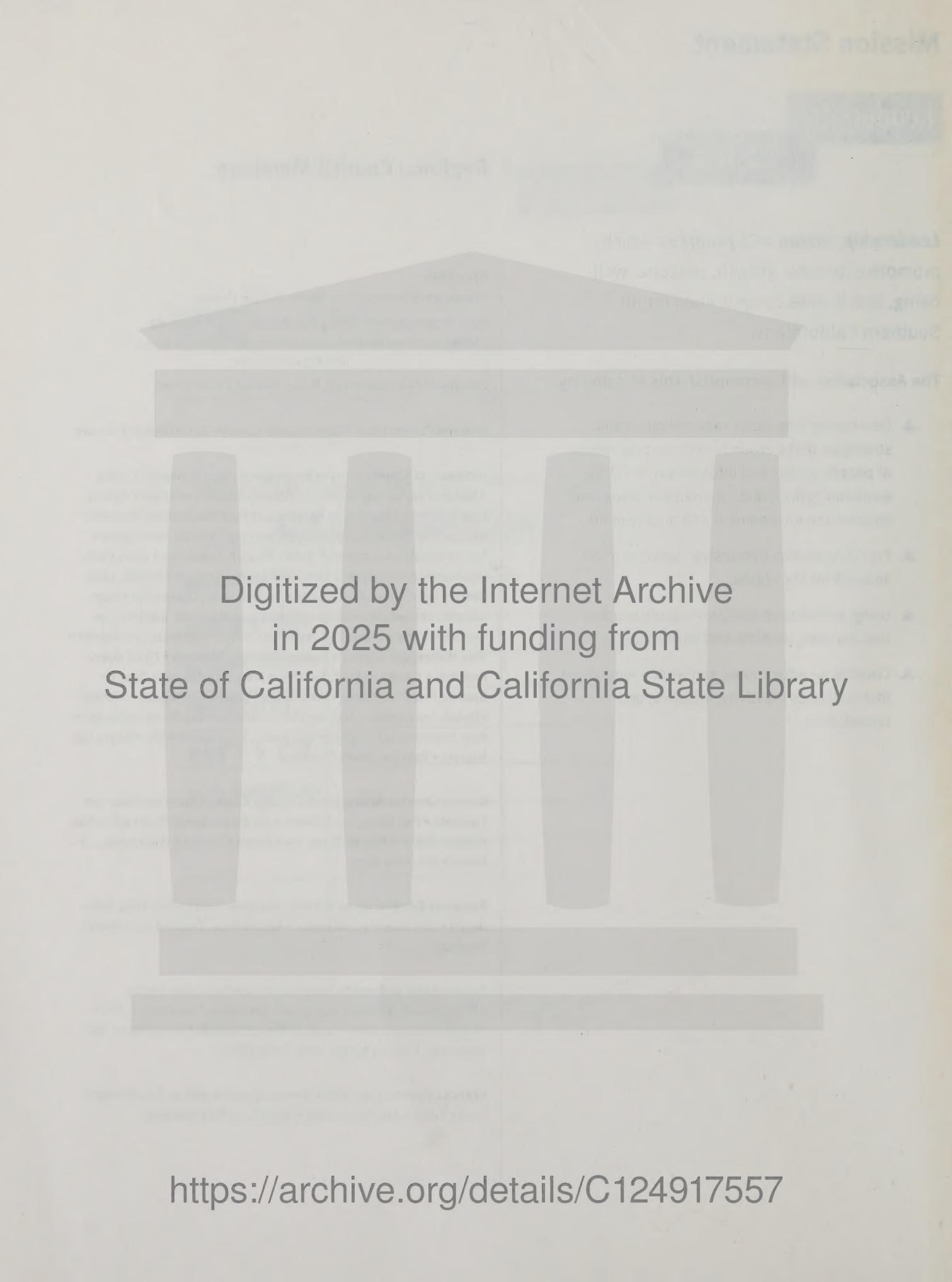
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SOLID WASTE TASK FORCE REPORT

BACKGROUND

The Solid Waste Task Force was formed in the fall of 1995 by SCAG's Energy and Environment Committee. It consists primarily of elected official members of the Energy and Environment Committee, with some ongoing participation of other SCAG elected officials. The Task Force was charged with the responsibility of investigating current and future solid waste management needs and capacities in Southern California; future waste management options; and recommendations on public policy guidance and cooperative efforts. Recommendations are organized by the various waste management options for the short term (1996-2000), medium term (2000-2010) and long term (2010-2040). Most of the recommendations are addressed to local governments, several emphasize the need for collective action to influence state or federal policy. Although the recommendations are not directed primarily at SCAG as an organization (i.e. that "SCAG should do this..."), they are intended to be recommendations that SCAG would encourage, support and advocate at all governmental levels.

The Task Force was assisted by a Technical Advisory Group made up of public and private sector waste interests. This group assisted in the collection and analysis of data and the review of recommendations. The findings and recommendations do not necessarily reflect the views of all Technical Advisory Group members nor of the agencies they are employed by or represent.

INTRODUCTION

The following summarize the significant subsequent findings and recommendations contained in the *Solid Waste Task Force Report*:

- If recycling is to continue to play a significant part in the state diversion mandates, a significantly expanded effort will be required by both the public and private sectors to develop markets for recycled materials. The California Integrated Waste Management Board, hereafter CIWMB, should take a lead role in coordinating a shift in emphasis from command and control strategies to incentive based strategies that develop markets for recycled materials, such as, but not limited to:
 - making loans easier to obtain for recycling market development
 - grants to local jurisdictions for recycling market development
 - tax reduction incentives for developing markets for recycled materials
 - taxing products utilizing virgin materials at a rate higher than those which utilize recycled materials
 - grants for research into products which utilize recycled materials
- Alternatives to landfills do exist and should continue to be actively pursued. Transformation processes including combustion/incineration, gasification/pyrolysis, anaerobic digestion and a number of specialized technologies offer varying short, medium and long term potential for helping meet Southern California's waste management needs. Composting alternatives can also play a major role. Developers of alternatives to landfills need financial and permitting help, and local government encouragement to initiate waste transformation and composting processes in Southern California. Additionally, State law should be revised to separate and remove "incineration" from the definition of "transformation," and provide full diversion credit to non-burn transformation technologies. State support and funding for pilot new alternatives to landfills is essential.
- Landfills currently are the most economic way to handle trash in Southern California and this is expected to continue for the foreseeable future. Siting new landfills or expanding existing ones will continue to be a major challenge. The efficient use of existing landfills could avoid increased waste disposal costs, and a depletion of existing natural resources. Costs of disposing of waste -could likely double or triple over the next decade in some parts of the SCAG region. Concerns about access to landfills are highly localized and will continue to be a strong focus in parts of Los Angeles County. Landfill capacity may be available but at some distance from the point of waste generation. Regionalization of trash handling facilities (transfer stations, material recovery facilities and distant facilities) could encourage the growth of rail-haul landfills. Additional landfill capacity needs to be addressed and a competitive environment needs to be maintained. Impediments to landfill siting or expansion (legal and

procedural) need to be addressed and overcome. Trash hauler competition will decrease as small and moderate companies can no longer compete with the national waste management companies. Maintaining a balance between publicly and privately owned and operated waste management facilities is essential.

RECOMMENDATIONS

The following summarize the Interim Policy Recommendations contained in the *Solid Waste Task Force Report* which were adopted by the SCAG Regional Council on December 5, 1996:

- Support state legislation that retains the 25 percent diversion mandate for year 1995, from the Integrated Waste Management Act of 1989 (IWMA) as amended. Encourage cities and counties to continue to implement their Source Reduction and Recycling Elements. Initiate a legislative change to IWMA that makes the 50 percent diversion mandate for year 2000 now a goal and extend the 50 percent diversion mandate to year 2010.
- Initiate and/or support state legislation that establishes 1990 or 1995 data as the base year for the balance of IWMA waste diversion targets and give credit to cities and counties that have met or exceeded their year 1995 25 percent diversion mandate. However, cities and counties should have the option to use 1990 or 1995 as the base year. The subsequent target should be credited by anything not sent to the landfill as residual solid waste. Any waste that is transformed or composted should not be considered as residual solid waste.
- The Solid Waste Task Force through December 1997 will be addressing continued solid waste issues, such as: education of elected officials and citizens on solid waste matters, working toward the removal of impediments to solid waste transformation facility development, and facilitating solid waste source reduction and waste prevention.
- SCAG sponsor and convene a conference in mid 1997 on solid waste issues and new directions in Southern California; direct staff to work with other agencies who have expressed interest in a conference and develop a coordinated agenda; and, direct that the conference be self supporting.
- Support state legislation that separates and removes "incineration" from the definition of "transformation," and which provides full diversion credit to non-burn transformation technologies.
- SCAG should keep the Solid Waste Study updated and available to the public as often as changes occur.

1.0 SOURCE REDUCTION OR WASTE PREVENTION

Source reduction or waste prevention consists of actions taken to limit the amount of waste produced. These actions can be taken by producers, distributors, and consumers of goods or services. They range from a beverage company's decision to distribute their products in reusable glass containers to an individual's choice to buy an appliance and keep it in good repair, thus extending its useful life. These types of decisions and the educational efforts that support them can have a significant impact on the amount of waste that needs to be disposed. Federal, state and local plans identify source reduction or waste prevention as an essential component in reducing the volume of waste that needs to be handled by the solid waste management system.

Business/Industry Based Options

Packaging -- Packaging serves several important functions such as providing containers for products, preventing tampering, advertising the product and keeping the product fresh. Most packaging is used only once before it is thrown away. Packaging accounts for nearly 30 percent of municipal waste. "Over packaging" or packaging of products in materials that are difficult to recycle are common problems. Various strategies are available to help reduce packaging related waste: purchasing in bulk quantities, buying fresh produce without packaging, purchasing products in refillable containers, looking for products in reusable containers, avoiding individually wrapped items, purchasing products in easily recycled containers and encouraging manufacturers to offer products with less packaging.

Consumer Based Options

Reducing Unwanted Mail -- Unwanted mail is a primary candidate for source reduction. Steps can be taken to reduce the amount of unwanted mail including contacting mail-order companies or organizations from which an individual regularly receives mail and informing them that your name not be sold to other mailing lists.

Reuse -- Reuse involves the use of products repeatedly, which ultimately extends their life. When we reuse products, we don't have to waste valuable natural resources in their creation and a substantial volume of waste is diverted from landfills. Strategies for reuse include: avoiding disposable products, finding new uses for common household items, seeking out durable products and determining what to do with unwanted durable products.

Conclusion on Source Reduction or Waste Prevention

Not much emphasis was placed by the Task Force on data collection in the area of source reduction, although much has been written on this topic at the federal and state levels. Local city and county Source Reduction and Recycling Elements also have addressed listings where data can be found. Members of the Task Force have concurred that source reduction offers great promise in reducing the volume of solid waste that must be handled by the solid waste management system. Efforts must be taken at the manufacturing and product distribution levels to reduce the amount of waste, for example, excess packaging waste as well as at the consumer level. Education of elected officials and the public at large, holds great potential for reducing the volume of waste. It is only through intensified educational programs at all levels, that the consumer will be given the opportunity to make the right choices and reduce the amount of waste going to landfills or transformation facilities.

Recommended Actions on Source Reduction or Waste Prevention

1.1 Short Term Actions

- 1.1.1** Continue to advocate voluntary efforts at the local, state and national levels to: 1) reduce material used in packaging products; 2) increase the useful life of products through durability and repairability; 3) decrease the toxicity of products; 4) facilitate material or product reuse; 5) stimulate reduced or more efficient consumer use of materials; and 6) increase production efficiency resulting in less production waste.
- 1.1.2** Continue to institute governmental source reduction programs such as: 1) municipal audits of the amount of waste being generated by different governmental functions; and 2) government procurement policies which specify product characteristics which encourage or facilitate waste reduction and the recycled markets
- 1.1.3** Continue to advocate consumer-based "recycling" or "eco-shopping" by strategies such as: 1) bringing reusable shopping bags; 2) buying concentrates; 3) buy in bulk; 4) purchase reusable products; 5) purchase durable and repairable products; 6) buying secondhand items; 7) borrowing or renting items when possible; 8) avoiding over packaged items; and 9) being aware of products containing hazardous ingredients.
- 1.1.4** Support state programs which offer incentives to those who use recycled materials, thus encouraging needed growth in the market for recycled goods.
- 1.1.5** Continue to support efforts at all levels to stimulate the growth of recycling markets, rather than simply legislation, that controls the state mandates and/or

demands percentage recycling.

1.1.6 Continue to advocate and support efforts at all levels to educate the elected officials and the public on the benefits of source reduction and specific actions that business, industry and the consumer can take to reduce the volume of waste that is generated.

1.2 **Medium and Long Term Actions**

1.2.1 Continue to advocate the development of incentives to increase the use of recycled materials, and thus increase the demand for recycled products, rather than legislate forced recycling, creating unmarketable products.

1.2.2 Encourage the institution of pricing mechanisms that encourage all sectors to produce less waste.

1.2.3 Advocate and support the education of businesses and industries for quantifiable source reduction efforts.

1.2.4 Continue to advocate and support efforts at all levels to educate the elected officials and the public on the benefits of source reduction and specific actions that business, industry and the consumer can take to reduce the volume of waste that is generated.

2.0 WASTE DIVERSION AND RECYCLING

Solid waste diversion in California is guided by the Act which mandates that cities and counties divert at least 25 percent of all waste from landfills by year 1995 and divert at least 50 percent by the year 2000. The CIWMB has established guidelines for determining what classifies as diversion by the different waste categories. Recycling is defined as the process of collecting, sorting, cleansing, treating, and reconstituting materials that would otherwise become solid waste, and returning them to the economic mainstream in the form of raw material for new, reused, or reconstituted products which meet the quality standards necessary to be used in the marketplace. Municipal efforts to recover materials from the waste stream have included programs and/or facilities such as: curbside recycling, Material Recovery Facilities (MRFs) and specific material recovery programs, like those dealing with construction and demolition waste, waste tires and household hazardous waste collection events.

Recycling Options

Curbside Recycling — In recent years, the most common method of collecting recyclables has been at the curbside. Various approaches have been taken to separate materials into specific containers or to commingle them in major categories. Materials collected vary according to cost and market conditions. Among those commonly collected at curbside are: glass, aluminum, plastics, steel and bimetal cans, newspapers, cardboard and mixed paper. Curbside collection of organic wastes, most commonly residential yard (green) waste, has gained increasing popularity in recent years. Various types of containers have been developed to facilitate curbside recycling as have the types of collection vehicles.

Materials Recovery Facilities (MRFs) — MRFs take materials from the waste stream by separating them into marketable commodities. For example, glass can be separated from other waste and sorted by color. Glass cullets must meet manufacturing industry standards before converting to new products. The process used by MRFs to separate recyclables can be accomplished by low-tech hand sorting or more high-tech mechanical sorting. The materials processed and marketed by MRFs generally include all types of containers (glass, aluminum and steel); various types and grades of paper (newsprint, office paper, corrugated and mixed paper); and plastics (usually PET and HDPE although other resins may be recovered).

Construction and Demolition Waste Facilities — Construction and demolition waste accounts for as much as 30 percent of the solid waste stream. Nearly all of this material is recyclable. Three categories of recoverable materials consist of inert materials, shredded wood products, and ferrous metal. Two types of facilities exist: one which recovers concrete, asphalt and wood from clean loads; and a second which processes mixed loads of materials. Equipment used in this process can consist of hammermills, shredders, trammel screens and vibrating deck screens. Nearly 95

percent of Northridge construction and demolition waste was recovered.

Tire Recycling — Many successful methods exist to recycle waste tires. In addition to being retreaded for resale, old tires have been successfully diverted from landfills and shredded for use as fuel, playground and athletic field sub-base, material for irrigation channels, road sub-base, plastic fill and as an additive in modified asphalt. Because tires have a high BTU heat content, they are being used as Tire Derived Fuel (TDF) and have been effectively used by the cement industry in Southern California.

Conclusion on Waste Diversion and Recycling

The Task Force has raised significant concerns about the state's efforts to administer waste diversion provisions in Integrated Waste Management Act of 1989 as amended(AB939). Specifically, issues have arisen concerning the need to make CIWMB waste diversion regulations and policy more flexible. Examples of areas needing more flexibility include: 1) policy for granting reductions above the 25 percent diversion requirement; 2) Countywide Integrated Waste Management Plan enforcement; 3) simplification of state regulations as established by CIWMB for measuring achievement of the percentage reduction requirement; 4) simplification of the disposal reporting requirements; 5) recognition of the differences between large urban versus smaller agricultural solid waste streams, and 6) legislative extension of the year 2000 date for reaching the 50 percent diversion requirement.

Task Force members have raised concern over the increasing cost of recycling programs to local governments and citizens. Various opinions have been expressed about different recycling technologies, their costs and benefits. Both "clean" and "dirty" MRFs are continuing to be sited throughout the region. The Task Force has looked at these efforts and noted the wide range of approaches, each with their own set of cost, public acceptance and environmental impact challenges. During the examination of increasing costs, the Task Force members visited five different MRFs of varying type, size and level of sophistication. Attached is information about the closing of MRFs that are happening currently. Access to rail facilities was noted at some locations. MRFs may play a major role in waste-by-rail decisions.

Solid waste industry professionals generally agree that one of the biggest challenges to making recycling work is maintaining the marketability of recycled materials. Market prices for recycled commodities have been highly volatile and unpredictable in recent years. The demand for these materials both nationally and internationally fluctuates. It has been hard to predict with any degree of certainty, which way the market will go on specific commodities. This uncertainty has created havoc with both public and private recyclers. In some instances, and of grave concern of the Task Force, it has been reported that because of the inability to market recyclable materials, some public and private recycling efforts have actually been forced to dump certain recyclables back into the landfill system.

The Task Force, in looking at recycling operations in the region, inventoried existing and

proposed transfer stations, some of which include full scale MRFs. Table V, at the end of the Task Force Report, details "Existing and Proposed Large Volume Transfer Stations and Material Recovery Facilities". Because of the varied nature of these facilities, it was often difficult to categorize them by the extent and degree of recycling operations performed.

Recommended Actions on Waste Diversion and Recycling

2.1 Short Term Actions

- 2.1.1** Continue to support the ongoing statewide effort to quantify the "cradle to grave," full life costs of local government waste diversion programs.
- 2.1.2** Advocate and support the formation of regional (city/county) waste management programs to further waste diversion efforts and provide an opportunity for a more consolidated approach for meeting state waste diversion target.
- 2.1.3** Advocate the development of subregional or multi-jurisdictional efforts to address solid waste processing, marketing, and disposal issues.
- 2.1.4** Continue to advocate CIWMB's taking a realistic look at market potential for recycled materials and their providing recycling market development assistance to local governments and the private sector.
- 2.1.5** Advocate and support CIWMB's continuing efforts to develop and stimulate local, national and international markets for recycled commodities and other programs to encourage the use of recycled products. These efforts should be closely coordinated with SCAG's work on the development of recycling-based industries as part of the broader effort to develop regional environmental business.
- 2.1.6** Advocate CIWMB providing a greater role to major recycling market industry groups (paper, plastics, metals, etc.), in the drafting of marketing development policy.
- 2.1.7** Support the implementation of the CIWMB MRF development plan providing a greater role to major recycling market industry groups (paper, plastics, metals, etc.), in the drafting of marketing development policy.
- 2.1.8** Continue to advocate and support efforts at all levels to educate the elected officials and the public on the benefits of waste diversion and recycling and specific actions that business, industry and the consumer can take in that regard.

- 2.1.9 Encourage consideration of rail accessibility to solid waste facilities and markets.
- 2.1.10 Reduction requirements should be based only on the amount of residual solid waste ultimately disposed in landfills

2.2 Medium and Long Term Actions

- 2.2.1 Advocate and support state and local efforts to explore opportunities for voluntary actions to exceed the 50 percent waste diversion target.
- 2.2.2 Continue to study whether legislative approaches to help market recyclables through financial support (loans, grants, tax incentives) are cost-effective.
- 2.2.3 Support and encourage the development of subregional or countywide processing facilities for solid waste.

ALTERNATIVES TO LANDFILLING

Transformation facilities take solid waste in different forms and convert it into forms, such as refuse-derived fuel, energy and building materials. Transformation processes include the following: combustion and incineration, gasification/pyrolysis /composting and a number of other specialized technologies. Composting includes anaerobic digestion and other technologies.

3.0 TRANSFORMATION FACILITIES

Combustion/Incineration

Waste combustion or incineration involves the burning of waste in either its original or processed form. Burning takes place in a furnace and the resultant steam can be used to power turbines which generate electricity. Advanced technologies are under development to make the combustion process more efficient.

Refuse-to-Energy Combustion Facility – Two traditional combustion based refuse-to-energy facilities operate in Southern California: one in Commerce and the other in Long Beach. Both are considered mass burn facilities that accept municipal solid waste (MSW) and feed this directly into the furnaces for combustion. These two facilities, plus sixty-six more are scattered throughout the country and process 22 million tons of MSW annually. The Commerce facility produces power seven days a week, 24 hours a day. An average of 100 trucks per day deliver loads Monday through Friday. The facility burns an average of 360 tons of trash per day. The process consists of the following: weigh scales, refuse storage pit, furnace and boiler, steam turbine-generator, dry scrubber, baghouse (cleans hot combustion gases), and ash disposal at a landfill. The Commerce and Long Beach facilities have a combined rated capacity of 1,760 tons per day. In 1994 they operated at 82 percent of their weekly capacity. Expansion to full operation of these two facilities would add almost 500,000 tons of disposal capacity, according to a recent consultant study. This same study noted that four 3,000 tons per day waste-to-energy facilities would reduce the need for landfills by approximately 7,000 tons per day, taking into account the seven-day per week operation and 25 percent ash (by weight) generation.

Refuse-Derived Fuel Production Plants -- A Refuse-Derived Fuel (RDF) facility has two stages. The first stage removes recyclable and/or non-combustible materials and shreds the combustible portion into a uniform particle size. The shredded material, is sometimes compressed into pellets for easier storage and handling. An advantage of this approach is that fuel can be prepared at a different location from where the combustion occurs. The second stage is the combustion operation which is essentially the same as the mass burn technology. There are 14 RDF production plants in the United States producing about 4,700 tons of pelletized fuel per day. RDF plants sited in Southern California could serve combustion power plants outside the Southern California airshed, eliminating concern about the impact of waste-

to-energy emissions.

Conclusion on Combustion/Incineration Technologies

The Task Force's visit to the Commerce waste-to-energy facility provided insight on the problems of siting and operating a waste combustion system. All refuse generated within the City of Commerce must be taken to the waste-to-energy facility. The facility was financed with \$50 million in revenue bonds. Current energy prices, resulting from energy deregulation, would not generate sufficient revenue to pay off the \$5 million in debt service per year. The plant operator noted that at current energy prices of 3 cents per kWh, they would have to charge about \$100 per ton of waste delivered at the facility to make waste-to-energy economically viable.

Another significant factor which limits the likelihood of waste-to-energy facilities being sited in the South Coast Air Basin is public's perception of air pollution problems associated with the combustion technology. Although the Commerce facility presently meets air pollution standards, perceived public concern continues to mitigate against new facility construction. There have been other previous unsuccessful attempts to site combustion facilities in Southern California. Consensus among local waste technical representatives is that waste-to-energy facilities will be very hard to site in this region, primarily for perceived environmental concerns.

Gasification/Pyrolysis

Gasification is the process of converting a solid material (in this case, waste) into a gas through chemical decomposition in the absence of oxygen. With gasification technologies the heat is provided internally, whereas in the pyrolysis process the heat source is external.

Circulating Fluid Bed Gasification (Sudsvik CFB & Edison AIR) -- Gasification of reactive solid waste fuels utilizing the Circulating Fluid Bed (CFB) gasification and hot gas clean-up process has two main advantages over combustion processes. Firstly, the resultant fuel gas is a more flexible energy source than combustion gas or steam; and secondly, the volume of process gas which has to be cleaned is smaller, thereby reducing the cost of the gas cleaning process. The result of this process is a product of clean fuel gas which can either be burned locally or piped to a variety of users. The process has been developed by Sudsvik Energy in northern Europe and consists of a gasifier and cracker. Solid waste and air are fed into the gasifier. After removing the solids from the gas stream in a separator, the raw process gas is injected through the bottom of the CFB cracker. The cracker cleans the gas and after additional separation of the solids, the gas can be used for a multitude of applications.

Southern California Edison has developed an Advanced Integrated Recycling Demonstration Project which would utilize Refuse-Derived Fuel (RDF) through the fluidized bed gasification process. The goal of a proposed demonstration facility is to process 200 tons per day of refuse at a Material Recovery Facility (MRF) to yield 150 tons per day of RDF, which will be gasified

to produce 50 million Btu's per hour of a clean gas containing about 115 Btu's per cubic foot. Edison continues to work on this technology and is looking currently in Europe for demonstration opportunities.

Biomass Gasification Power Generation (Battelle/FERCO) -- Biomass can be used as a feedstock for cogeneration systems. Currently biomass resources include: residue from forest products industry, urban wood waste, food processing waste, and tree prunings. Different types of biomass systems are possible and include: direct combustion of the fuel to produce high temperature, high pressure steam; use of gas turbine or fuel cell high efficiency technologies like gasification. The process (developed by two organizations, Battelle and FERCO) uses two physical separate reactors: (1) a gasification reactor in which the biomass is converted into a medium Btu gas and residual char substance; and, (2) a combustion reactor that burns residual char to provide heat for gasification. A commercial scale demonstration of the process is underway at the Mc Neil Generating station in Burlington, Vermont.

Pyrolytic Conversion Process (Bal Pac System) -- Balboa Pacific Corporation (located in Santa Fe Springs, California) has developed the Bal Pac System, a proprietary solid waste disposal system which utilizes pyrolytic conversion. The pyrolytic conversion process reduces toxic substances to sterile carbon char which can be used to produce a variety of usable products, and the hot gases can be used to produce electricity. The solid by-product is primarily carbon and stabilized metals. The Bal Pac System is not incineration. Rather than burning waste, the System thermally degrades organic materials at temperatures in excess of 1200 degrees Fahrenheit. Emissions resulting from the decomposition of waste meet all standards set by the United States Environmental Protection Agency, according to the developer. Balboa Pacific has a small 100 pounds per hour demo unit at their Santa Fe Springs facility. They also have a two ton per hour unit at California Steel handling industrial waste. The company is negotiating with a few Southern California cities on the possibility of constructing a municipal waste demonstration unit, either separately or in conjunction with a composting technology. Balboa Pacific envisions that a 300 ton per day unit could be built for about \$18 million, and that it could process municipal solid waste at a cost of about \$30 per ton.

Controlled Plasma Gasification (IET) -- Controlled Plasma Gasification (CPG) uses electrically conductive gas, or plasma, to vitrify waste to the point that it becomes molten. The residual material, solid glass or metal, prevents any contaminants from leaching into the soil or water. The technology will be marketed commercially by Integrated Environmental Technologies (IET). It can be used for most solid waste streams, including hazardous waste, medical waste, and mixed solid and industrial waste. The resultant byproduct can be used for different purposes, including construction material. CPG also uses an energy recovery process to efficiently recover energy from treated waste. IET intends to further develop the technology at its research facility in Richland, Washington. A two to ten ton per day prototype facility will be built in Richland.

Proler SynGas Process/TRW Vitrification System -- Proler's SynGas process melts, decomposes, vaporizes and separates various waste materials in the high-temperature atmosphere of a specially designed reactor. The process reportedly can recycle industrial solid and liquid wastes, municipal solid wastes, special and hazardous wastes and biomass wastes into a synthetic gas and recyclable metals. The refuse is gasified at a high temperature (up to 20,000 degrees Centigrade), the remaining ash melts into a slag and a medium Btu gas is produced. TRW has developed a vitrification process to work in combination with Proler's gasification process, resulting in an inert residue from the SynGas process. The inert glass frit, can be used to manufacture products with commercial value, such as ceramic tile, spun wool insulation, roofing shingles and cement aggregate. Proler has operated a 50 ton-per-day demonstration facility in Houston, Texas since 1991. The technology has been applied to hazardous and medical waste, but not to municipal waste. The plasma furnace is perhaps the costliest of the waste management technologies.

Conclusion on Gasification/Pyrolysis Technologies

The Task Force was briefed by Lory Larson, of Southern California Edison, on technologies for gasification of waste. The primary conclusions for these technologies follows:

- Gasification/pyrolysis of refuse is near commercialization, but ongoing commercial demonstration of the various technologies is needed.
- Product gas from the technologies can be cleaned to burn cleaner than natural gas.
- Gas produced through the gasification process can replace natural gas in large industrial operations.
- The solid by-product from pyrolysis is carbon char and can readily be disposed of in landfills or used for other beneficial purposes.
- Integrating gasification/pyrolysis technologies with a material recovery facilities creates an efficient recycling concept.
- When product gas displaces natural gas, no new air emissions are created.
- The gasification technologies have no air emissions from the process and have high efficiency conversion; however, the gas requires scrubbing, the technology is not commercially proven on refuse, and entails moderate technical risk.
- The pyrolysis technologies also have no air emissions from the process and yield a moderate Btu gas; however, the gas requires scrubbing, oil is corrosive, the process requires metallurgy to avoid large quantities of carbon in char and production of oil,

and there is a moderate technical risk.

The Task Force toured the Balboa Pacific facility in Santa Fe Springs, where they observed the small demonstration unit. They also had an opportunity to view the refitted unit that was being prepared for industrial waste operations in Australia. The Balpac process has potential for helping meet solid waste management needs in Southern California in the near term.

Anaerobic Digestion

Anaerobic digestion is the biological conversion of organic material (in this case, waste) into a gas in the absence of oxygen. Biological bugs literally eat the organic material in the waste, and their by-products are methane gas and carbon dioxide.

Valgora Process — The Valgora process uses anaerobic digestion to treat municipal solid waste. Commercial plants have been operating for several years , with the latest plant built in Tilburg, France in 1994. The process treats waste coming from selective or bulk collection. In the case of bulk collection, anaerobic digestion is performed after a sorting unit separates the organic material (fermentable matter and cardboard) from other waste. The waste processing operation utilizes: a preparation unit, an anaerobic digester, a biological drying and organic amendment refining unit, and a biogas valorization unit. A plant in Amies, France has been in operation since 1988 and treats 55,000 tons of household waste a year with three digester units.

TeraMeth Industries (Methanol, Hydrogen and Carbon Dioxide) Related Process can also Utilize Landfill Gas —TeraMeth Industries has developed a process for converting landfill gas into viable products. The process takes the landfill gas and converts it into sustainable methanol production. The smaller volume TMI plant starts with only a 12 month construction window. It can produce 30 to 100 metric tons of Methanol per day. A large volume \$250 million dollar plant requires about 4-5 years to build and can handle 2,500 metric tons of waste.

Conclusion on Anaerobic Digestion Technologies

The Task Force was not able to fully evaluate the anaerobic digestion technology, but there may be limited opportunities for use of the technology, especially in conjunction with existing or closed landfill operations.

Other Specialized Technologies

This category includes a few technologies that do not fit into the previous transformation processes.

Bio-Mass Systems, Inc. (Recyclables, Compost, High-Btu Fuel Pellets, High-Value Acetic Acid and Ethanol) -- The system co-disposes sewage sludge derived from municipal treatment facilities by composting it with solid waste to produce commercially viable compost. Costly, inefficient curbside pre-separation of recyclables is not required and the system recovers recyclable material in a marketable form. Profits from selling recyclables (e.g. steel, glass, aluminum), fuel pellets, compost, methanol, ethanol and acetic acid, allow for low disposal charges to municipalities that are competitive with alternatives. The nine step process reduces waste volume by 80% and recycles it into valuable products. Bio-Mass estimates that it would cost about \$65 million to install and operates a 1,000 ton per day facility in Southern California, with an estimated tipping fee of \$32 per ton. The system is based in part on technology developed by Dr. James Gaddy and operated at a plant in Fayetteville, Arkansas for over the past 15 years. According to the developer, all of the components used in the system are tried and true working entities from various industries such as pulp, food and waste water.

Hydromex -- Hydromex technology is a process that accepts every category of waste including household waste, construction waste, chemicals, packing materials, contaminated soil, medical waste, textile materials, plastics, tires, paint and oil. Waste is reclaimed to produce environmentally safe products, like extruded median dividers, building blocks, 2 x 4's, fence posts, fireproof tile, retaining walls and sight and sound barriers. The process can also produce clean burning energy materials that contain higher BTU value than coal. Alternative products include soil conditioning and stabilizing products, and an environmentally acceptable method for producing electric power from waste through heat distillation technology. The process utilizes solid waste shredders, liquid waste storage tanks, neutralizers, structure formers, liquid waste pre-reaction mixer, turbo mixer for liquid/solid mixing, reaction additives, pressure pump reaction stage, hydraulic press reaction for structured end products, reshredding (if quality not acceptable), and the finished product. Through chemical combinations, heat and pressure, a wide range of molecular rearrangements occur. All living organisms in the waste are unable to survive the high temperatures and pressures of the process. Rejected products can be recycled. According to the developer, end products are sanitary, durable, non-toxic and if desired, fire retardant and moisture resistant. Hydromex is a zero emissions process, with all gases and liquids released during the process being recycled through a scrubbing system. Hydromex's first processing plant, a 50 ton per 8 hour shift facility, is expected to be fully operational in late 1997. They anticipate manufacturing processing facilities in up to 200 ton per 8 hour shift size. The component parts are constructed on skids which are mobile and could be moved from site to site. Hydromex estimates that revenues from fabricated product sales will eventually average in excess of \$100 per ton,

with an eventual average of \$10 to \$350 per ton. They believe that the plants can be profitable without a tipping fee, as long as there is a product for sale.

Conclusion on Other Specialized Technologies

The Task Force met with representatives of the Bio-Mass Systems and Hydromex processes. Both processes have potential for helping meet solid waste management needs in Southern California in the near term. The Bio-Mass Systems process has potential for providing revenues from a number of different products, depending upon the way in which a system would be configured. Revenues could be derived from selling recyclables (e.g. steel, glass, aluminum), fuel pellets, compost, methanol, ethanol and acetic acid. Bio-Mass has made a major investment in perfecting its technology, utilizing a number of "off-the-shelf" proven technologies. Some Task Force members expressed concern that there were no operating facilities which utilize the technology as detailed in the Bio-Mass presentation. Concern was also expressed about potential heavy metals in the sewage sludge portion of the waste stream. These concerns were shared by some members of the Solid Waste Technical Advisory Group. Overcoming these concerns will be an on-going process.

The Task Force viewed a demonstration of the Hydromex technology at the Advanced Disposal MRF in Hesperia. This unit was a 50 ton per 8 hour shift waste transformation system that had been built for use in Hawaii. The plant was not fully operational on the day of the demonstration because of problems experienced with one of the systems components. The developers indicated that the problem with the mixer has been resolved and that final adjustments are underway on product formulation and calibration. Task Force members expressed some concern that further marketing and durability/quality studies were needed on the various extruded products. Some Technical Group concern was expressed that more lengthy demonstration of the technology was needed to assure that plant breakdowns would be minimized and redesign of the systems could be accomplished without a significant impact on plant operations. Hydromex has been working with a number of Southern California interests to locate one or more plants in the area.

Recommended Actions on Transformation Facilities (Alternatives to Landfills)

3.1 Short and Medium Term Actions

- 3.1.1** Advocate changes in state law which provide financial support and/or tax incentives for the development of pilot or demonstration solid waste transformation technologies.
- 3.1.2** Support federal and state incentives for research and demonstration projects for solid waste transformation technologies.

- 3.1.3 Support the siting of pilot and demonstration solid waste transformation technologies, individually or in conjunction with other technologies, giving equal consideration to environmental, public opinion, and cost factors.
- 3.1.5 Support state legislative and CIWMB administrative actions to streamline the permitting processes for solid waste transformation technologies.
- 3.1.6 Advocate CIWMB actively promote solid waste transformation technologies, and provide information concerning the costs and benefits of these technologies to local governments.
- 3.1.7 Advocate county and local programs to educate the public on the costs and benefits of solid waste transformation technologies.
- 3.1.8 Additionally, State law should be revised to separate and remove “incineration” from the definition of “transformation,” and provide full diversion credit to non-burn transformation technologies.

3.2 Long Term Actions

- 3.2.1 Consider siting solid waste transformation technologies, individually or in conjunction with other technologies, giving consideration to environmental, public opinion, and cost factors.

4.0 COMPOSTING FACILITIES

Composting is the bacterial decomposition of organic materials, and can take the form of aerobic decomposition (utilizing bacteria that live in the presence of oxygen) or anaerobic digestion of waste stream materials (utilizes materials that live in an oxygen free environment). Composting reduces the volume of organic material by about 50 percent. Processing can vary from windrowing in piles to utilizing mechanized equipment. Composting is useful for lawn "green" waste (leaves, grass, weeds, small prunings). Some food wastes can also be composted. Biosolids from sewage sludge can also be composted.

Genesis II (The Updated Burr Process) -- The Genesis II process consists of four basic activity functions: waste receiving, pre-compost shredding, composting and post-compost product production. All activities are conducted in a completely enclosed building, usually of a pre-engineered steel design, set on concrete foundations with a slab floor. The waste moves on a conveyor belt and unacceptable materials are removed. Waste is double milled through primary and secondary shredders and moisture is added. The material is transported to composting areas and arranged in windrows approximately 15 feet wide and 12 feet tall. Waste is periodically turned to facilitate the composting process. Post-compost materials are ground and sorted to uniform size. The Genesis II technology is a bio-conversion system which produces both organic and inorganic fractions from the waste. In a major demonstration in Florida an 800 ton per day facility converted 96.5 percent of all delivered municipal solid waste into usable agricultural and horticultural products. Only 3.5 percent of the waste was rejected as unprocessable and unsuitable for conversion into product. The end product is a safe useful soil conditioner. A Genesis facility requires a land site of 12 to 20 acres, with a normal capacity ranging from 400 to 1,200 tons per day. No income estimates are available for California, but from plants in the eastern United States (McKeesport, Kingston and Florida) revenue from sales of product ranged from \$40 to \$50 per ton. A Genesis facility costs approximately \$32 million for a 1,200 tons per day facility and about \$40 per ton for operating costs, including debt service.

Bedminster Bioconversion (Eweson Digester Process) -- The Bedminster In-Vessel Co-Composting Process utilizes both municipal solid waste (MSW) and waste water (WW) biosolids. Developers of the technology are working with Balboa Pacific Corporation on a proposal for a city in the Coachella Valley. The proposed project would unite the Bedminster and Balboa Pacific technologies to address local solid waste concerns. Bedminster has in operation plants in the United States, in Arizona, Texas, Tennessee and Georgia. The Cobb County, Georgia, facility composted 300 tons of MSW per day with 150 wet tons a day of primary and digested sewage sludge. Bedminster plants have an optimum size in the 600 to 800 tons per day range. For each 100 tons of solid waste processed, approximately 30 tons of non-degradable waste is produced, which must be landfilled. They are also under contract with the City of Miami, Florida to construct a

facility that will handle 500 tons per day of MSW and 250 tons per day of WW biosolids. This facility is expected to be operational in late 1996. The process is somewhat unique, as there is no grinding or shredding of the waste materials prior to the composting activity. The process has some similarities to the Genesis or other composting processes, but utilizes Eweson Digestors in an aerobic environment to facilitate the waste being converted into compost. Natural microbial activity converts the biodegradable waste into compost. Three days in the digester, one day in each compartment, produces a level of composting that takes weeks in other processes. Odor and fire problem are still being identified and addressed.

Conclusion on Composting Technologies

The Task Force met with representatives of the Genesis II and Bedminster Bioconversion processes. Both processes have potential for helping meet solid waste management needs in Southern California in the near term.

The Task Force heard the developers of Genesis II state that the process converts up to 95 percent of garbage into valuable soil amendment; that processing occurs within a fully enclosed structure; that there is no problem with noise, odors, vermin, bird-droppings, insects or dust; that the product can be marketed to agriculture and other users; that the process can be integrated with existing recycling systems at significant savings; and that the technology is proven. The developer noted that the Florida plant was shut down because of charges made by the principal of an adjacent school that the facility produced odors. The odor problem appears to have been from the adjacent landfill operation. No operational deficiencies of any kind, including odor emissions, were ever noted by any of the inspecting agencies. Task Force and Technical Advisory Group members raised questions concerning possible heavy metals in the waste stream, because of the grinding and shredding of the incoming waste. The developer stated that there has never been a problem of heavy metals in Agrisoil, the compost product made in a Genesis facility.

The Task Force also had discussions with the developers of the Bedminster bioconversion process. They stated that a Bedminster plant in California in the size range of 1,000 tons per day would have a capital cost of approximately \$25 per ton processed, with an equivalent \$25 per ton of operating and maintenance costs. In a separate quote for the City of Los Angeles, they estimated the capital cost for a 300 ton per day facility in the area of \$125,000 per installed daily ton of solid waste processing capacity, plus or minus 15 percent. Task Force and Technical Advisory Group members also expressed possible concern for heavy metals in the waste stream. Bedminster noted that their process does not employ mechanical grinding, shredding or pulverizing of the incoming waste and their compost meets or exceeds both the EPA's and the State of California's requirements for "exceptional quality" compost. Other concerns are still being addressed.

Recommended Actions on Composting (Alternatives to Landfills)

4.1 Short and Medium Term Actions

- 4.1.1** Advocate changes in state law which provide financial support and/or tax incentives for the development of pilot or demonstration solid waste composting technologies.
- 4.1.2** Support federal and state incentives for research and demonstration projects for solid waste composting technologies.
- 4.1.3** Support the siting of pilot and demonstration solid waste composting technologies, individually or in conjunction with other technologies, giving equal consideration to environmental, public opinion, and cost factors.
- 4.1.5** Support state legislative and CIWMB administrative actions to streamline the permitting processes for solid waste composting technologies.
- 4.1.6** Advocate CIWMB actively promote solid waste composting technologies, and provide information concerning the costs and benefits of these technologies to local governments.
- 4.1.7** Advocate county and local programs to educate the public on the costs and benefits of solid waste composting technologies.

4.2 Long Term Actions

- 4.2.1** Consider siting solid waste composting technologies, individually or in conjunction with other technologies, giving consideration to environmental, public opinion, and cost factors.

Conclusion on Alternatives to Landfilling

The Task Force concludes that there are several private companies that are prepared to develop facilities which utilize a variety of transformation or composting technologies to convert mixed solid waste into usable products and/or industrial feedstocks. This provides a potentially viable and environmentally superior alternative to landfilling.

5.0 LANDFILLS

Landfills have been the major component in the solid waste management system for some time. With the passage of the Resource Conservation and Recovery Act (RCRA) and the recently approved Subtitle D amendments, national minimum standards have been set for the siting, operation and closure of landfills. Public and private landfill operators have been faced with continuing problems associated with the siting of new landfills, and in some cases, the expansion of existing ones. Concern has been expressed about the length of time and increased cost of siting and building new landfills. Examples exist in Southern California of landfills taking upwards of ten years to become operational. Recent closures of the BKK and Lopez Canyon landfills in Los Angeles County, prior to their permitted or potential capacities being fully utilized, have raised another issue of concern. Steps have been taken by landfill operators or are being proposed by interested parties to expand the life of existing landfills. A variety of techniques are available to preserve valuable landfill capacity, as detailed in a study by the City of Santa Clarita on the landfill situation in Los Angeles County.

New/Expanded Landfills

Public agencies and private parties continue efforts to site new landfills and expand existing ones. These efforts have been documented in the Siting Elements of Countywide Integrated Waste Management Plans for Los Angeles, Orange, Riverside, San Bernardino, Ventura and Imperial counties.

Table I, "Listing of Solid Waste Landfills and Transformation Facilities" details the current (October 1996) situation with operating landfills and transformation facilities (2 refuse to energy plants). Table II, "Capacities of Solid Waste Landfills and Transformation Facilities" deals with both existing and proposed or expanded landfills. These two tables together present a snapshot of landfills in the SCAG region.

Table III, "Existing and Proposed Waste-By-Rail and Truck Haul Facilities" details waste-by-rail and outlying truck haul landfills within Southern California and nearby states. These types of landfills have become more common in recent years, as problems with siting new or expanding existing landfills have become more difficult. Waste-by-rail landfills have been or are being sited at more distant locations from urban areas. They often have large permitted available capacities and are becoming a major component of the solid waste management system. Waste-by-rail or rail haul generally consists of a system which includes (1) a transfer station or MRF, (2) a rail loading facility, (3) rail transfer of the waste, and (4) unloading of the rail cars at a distant landfill site for disposal. Waste-by-rail projects have been successfully implemented throughout the country. Facilities accepting municipal waste by rail are currently operating in Arizona, Oregon, Utah, and Washington. Three major projects in Southern California are in various stages of the development or approval process. They include: *California RailFill* (formerly the

Mesquite Regional landfill project) located in east central Imperial County, *Rail Cycle* (also known as the Bolo Station landfill project) located in southeastern San Bernardino County, and *Eagle Mountain* landfill located in east central Riverside County.

Table IV, "Existing and Forecasted Yearly Solid Waste Quantities" deals with the speculative subjects of waste generation (how much waste is produced); waste diversion (how much waste is diverted to recycling facilities); imports and exports (how much waste comes into or is shipped out of a given county); and, excess/ shortfall in permitted landfill capacity. Forecasts are through 2010, except for Imperial County where they only extend through 2006. All forecasts are drawn from the current versions of Countywide Integrated Waste Management Plans, some of which are currently being adopted or updated. Each time a landfill closes unexpectedly, when a new one is permitted or an existing one expanded, the forecasts are subject to change. Perhaps the most difficult component of the waste stream to forecast involves out-of-county exports and imports.

Conclusion on Landfills

The Task Force has taken a close look at a variety of landfill situations in Southern California. It has visited one of the largest landfills in the country, the 13,200 ton per day Puente Hills landfill in Los Angeles County; the large Bradley West landfill and recycling park in Los Angeles County; the Bailard landfill in Ventura County, just prior to its closure; and, the recently opened expansion of Sunshine Canyon landfill in Los Angeles County. During these visits Task Force and Technical Advisory Group members had opportunities to experience first hand the problems faced in siting, expanding, operating and closing landfills. The Task Force also had detailed presentations on two proposed waste-by-rail landfills, the California RailFill landfill project located in east central Imperial County and Eagle Mountain landfill located in east central Riverside County. The Technical Advisory Group chair and some members participated in an extensive seminar on "The Regional Landfill and Railhaul - Long Term Planning and Feasibility/Project Status Reports" at the 1996 Waste Expo conference.

Throughout the nearly year long dialog to look at alternatives to landfills, the Task Force acknowledged that landfills will continue to be a major part of the solid waste management scene. The Task Force makes the following findings pertaining to landfills in Southern California:

- Differences of opinion exist on the state of the landfill situation in Southern California. Some have portrayed it as being in a crisis situation, especially in Los Angeles County. Others have pointed to recent successes in expanding existing landfills. Recently two landfills were prematurely closed, in Los Angeles County with potentially available capacity.

- Opportunities exist for extending the life of operating Southern California landfills, through alternative daily cover strategies, some of which are presently being pursued.
- Few question the difficulty experienced throughout the region in siting new or expanding existing landfills. Lawsuits or the threat of lawsuits have caused a number of landfill projects to be delayed or stopped.
- The process for permitting new or expanded landfills in California is time consuming and costly. The Task Force heard that nearly \$60 million was spent to date on siting and permitting a regional rail haul landfill. The costs of engineering studies, legal and environmental analysis continue to skyrocket, especially on controversial projects. On the other hand, a rail haul landfill in an adjacent state was reportedly sited for about \$3 million. All costs for landfill siting will ultimately be reflected in tipping fees and must be carried by the communities in the long run.
- Rail haul projects have the potential of providing long-term security for the region's residual waste handling capacity. With rail-haul, the added transportation cost is a continuing concern. Properly sited rail-haul projects, which fully mitigate environmental concerns, have a great potential in helping to meet Southern California's waste management needs.
- The region's leaders should be aware of the potential economic loss to Southern California resulting from decisions to transport waste by rail to landfills in all states.
- In recent years there has been a trend toward consolidation of solid waste collection, transfer, MRFs and landfill operations in a few large companies. This trend has potential pluses and minuses for Southern California governments, businesses and citizens. Economies of scale can mean cost savings. The economic viability of smaller independent solid waste businesses which may not have access to large landfills or rail facilities owned and operated by their competitors will be threatened. In addition, there is no local control of price competition for landfill owners.
- The cost of landfilling is only a part of the total solid waste management cost picture. Some members of the Task Force and Technical Advisory Group believe that waste management costs, as reflected in landfill tipping fees could increase by 50 percent, double or even triple over the next two decades. There are no empirical studies to support this, only opinions. This matter is, however, an important area deserving further study.

Recommended Actions on Landfills

5.1 Short and Medium Term Actions

- 5.1.1** Advocate the continuing review and update of the Siting Elements of Countywide Integrated Waste Management Plans and facilitate the ongoing public dialog on the role and need for landfills.
- 5.1.2** Advocate CIWMB's taking a major role in looking at options to continued landfilling of waste, including the utilization of alternative strategies to extend the life of existing landfills.
- 5.1.3** Support the streamlining of the CEQA process and landfill siting regulations and procedures.
- 5.1.4** Encourage and support existing landfills and the siting of new landfills and the siting of new landfills necessary to meet residual disposal needs.
- 5.1.5** Evaluate any proposals to transport waste by rail to other states and assess the impact of the actions on the economy of Southern California.
- 5.1.6** SCAG should continue to collect and disseminate information on solidwaste facilities and seek reimbursement from CIWMB.

SOLID WASTE TASK FORCE REPORT

TECHNICAL TABLES

Table I
Listing of Solid Waste Landfills
and Transformation Facilities

Disposal Facility	SWFP Number	Operator	Permitted Tonnage Daily	Permitted Tonnage Yearly	\$/Ton	Host/Business License Fee
Imperial County (existing Class III landfills)						
Brawley	13-AA-0008	COI	68	21,216		Varies
Calexico	13-AA-0004	COI	70	21,840		Varies
Holtville	13-AA-0006	COI	19	5,928		Varies
Hot Spa	13-AA-0010	COI	1	110		Varies
Niland	13-AA-0009	COI	1	260		Varies
Ocotillo	13-AA-0005	COI	1	156		Varies
Palo Verde	13-AA-0007	COI	1	260		Varies
Picacho	13-AA-0012	COI	20	52,000		Varies
Republic/El Centro	13-AA-0019	COI	250	84,506		Varies
Salton Sea	13-AA-0011	COI	1	156		Varies
Worthington	13-AA-0001	COI	29	7,540		Varies
	TOTAL		461	193,972		
Los Angeles County (existing Class III landfills)						
Antelope Valley	19-AA-0009	Palmdale	1,400	436,800	\$30.00	
Azusa (closed to non-inert waste)	19-AA-0013	BFI	NA	NA	NA	NA
BKK (closed)	19-AF-0001	BKK Corp.	NA	NA	NA	NA
Bradley West	19-AR-0008	WM	10,000	3,120,000	\$33.80	10%
Brand Park	19-AA-0006	Glendale	90	26,400	NA	
Burbank	19-AA-0040	Burbank	240	62,400	\$21.55	
Calabassas	19-AA-0056	LACSD	3,500	1,085,000	\$24.15	10%
Chiquita Canyon	19-AA-0052	Laidlaw	5,000	1,560,000	\$35.53	10%
Lancaster	19-AA-0050	WM	1,000	312,000	\$34.15	10%
Lopez(closed)	19-AA-0820	City of L.A.	NA	NA	NA	
Pebbly Beach	19-AA-0061	Seagull	33	10,100	NA	10%
Puente Hills	19-AA-0053	LACSD	13,200	3,744,000	\$17.57	10%
San Clemente	19-AA-0063	US Navy	4.8	480	NA	
Savage Canyon	19-AH-0062	Whittier	350	109,200	\$35.00	
Scholl Canyon	19-AA-0012	LACSD	3,400	1,054,000	\$25.11	15%
Spadra	19-AA-0015	LACSD	3,700	780,000	\$17.57	10%
Sunshine Canyon	19-AA-0853	BFI	6,600	2,059,200	\$35.00	15%
	TOTAL		48,517.8	14,359,580.0		
Los Angeles County (existing transformation facilities)						
Commerce Refuse-Energy	19-AA-0506	LACSD	1,000	145,600	NA	
Southeast Resource Recovery	19-AA-0012	Mont. Pac.	2,240	471,000	NA	
	TOTAL		3,240	616,600		
Los Angeles County (existing unclassified inert landfills)						
Azusa Land	19-AA-0013	BFI	6,500	2,028,000	NA	
Nu-way Live Oak	19-AA-0849	Sanifill, Inc.	6,000	1,872,000	NA	
Peck Road Gravel Pit	19-AA-0838	SLS & N, Inc.	1,210	377,520	NA	
Reliance Pit #2	19-AA-0854	Cal Mat	6,000	1,872,000	NA	
	TOTAL		19,710	6,149,520		

Table I (Continued)
Listing of Solid Waste Landfills
and Transformation Facilities

Disposal Facility	SWFP Number	Operator	Permitted Tonnage	Host/Business
			Daily	License Fee
			Yearly	\$/Ton
Orange County (existing Class III landfills)				
Frank Bowerman	30-AB-0360	OCOIWMD	8,500	1,842,000 \$27.00
Olinda	30-AB-0016	OCOIWMD	1,400	1,289,400 \$27.00
Olinda Alpha	30-AB-0035	OCOIWMD	8,000	2,456,000 \$27.00
Prima Deshecha	30-AB-0019	OCOIWMD	4,000	1,228,000 \$27.00
Santiago Canyon	30-AB-0018	OCOIWMD	8	2,000 \$27.00
TOTAL			21,908	6,817,400
Riverside County (existing Class III landfills)				
Anza	33-AA-0013	RCWRMD	40	12,360 \$30.00
Badlands	33-AA-0006	RCWRMD	1,400	432,600 \$30.00
Blythe	33-AA-017	RCWRMD	260	80,340 \$30.00
Coachella	33-AA-0012	RCWRMD	2,000	618,000 \$30.00
Desert Center	33-AA-016	RCWRMD	16	5,840 \$30.00
Edom Hill	33-AA-0011	RCWRMD	1,200	370,800 \$30.00
El Sobrante	33-AA-0217	WW	4,000	1,236,000 \$30.00
Highgrove	33-AA-0003	RCWRMD	2,700	834,300 \$30.00
Lamb Canyon	33-AA-0007	RCWRMD	1,900	587,100 \$30.00
Mead Valley	33-AA-0009	RCWRMD	1,100	339,900 \$30.00
Meca II	33-AA-0071	RCWRMD	50	15,450 \$30.00
Oasis	33-AA-0015	RCWRMD	41	12,669 \$30.00
TOTAL			14,707	4,545,359
San Bernardino County (existing Class III landfills)				
Agua Mansa	36-AA-0019	E.L. Yeager	400	120,000 \$33.00
Apple Valley	36-AA-0048	CSBWSD	253	77,924 \$33.00
Baker	36-AA-0049	CSBWSD	10	2,080 \$33.00
Barstow	36-AA-0046	CSBWSD	350	108,150 \$33.00
Big Bear	36-AA-0056	CSBWSD	250	77,250 \$33.00
California Street	36-AA-0017	Redlands	350	65,000 NA
Cushenberry	36-AA-0074	Mitsubishi	40	8,000 NA
Colton	36-AA-0051	CSBWSD	2,500	640,000 \$33.00
Hesperia	36-AA-0050	CSBWSD	308	110,572 \$33.00
Holiday (only construction)	36-AA-0064	FH		NA \$1.00
Landers	36-AA-0057	CSBWSD	381	117,729 \$33.00
Lenwood-Hinkley	36-AA-0061	CSBWSD	110	22,880 \$33.00
Mid Valley	36-AA-0055	CSBWSD	4,000	1,224,000 \$33.00
Milliken	36-AA-0054	CSBWSD	3,500	1,081,500 \$33.00
Morongo Valley	36-AA-0058	CSBWSD	200	416,000 \$33.00
Oro Grande	36-AA-0028	USG	287	57,500 NA
Phelan	36-AA-0044	CSBWSD	198	60,984 \$33.00
San Timoteo	36-AA-0087	CSBWSD	1,000	306,000 \$33.00
Trona-Argus	36-AA-0041	CSBWSD	88	22,616 \$33.00
Twentynine Palms	36-AA-0060	CSBWSD	176	54,384 \$33.00

Table I (Continued)
Listing of Solid Waste Landfills
and Transformation Facilities

Disposal Facility	SWFP Number	Operator	Permitted Tonnage		Host/Business License Fee
			Daily	Yearly	\$/Ton
San Bernardino County (existing Class III landfills)					
Twenty-nine Palms USMC	36-AA-0067	USMC	48		NA
US Army (Fort Irwin)	36-AA-0068	USG	80	8,300	NA
Victorville	36-AA-0045	CSBWSD	660	236,940	\$33.00
Yermo	36-AA-0047	CSBWSD	15	180	\$33.00
			TOTAL	15,204	4,817,989
Ventura County (existing Class III landfills)					
Simi Valley	56-AA-0007	WM	3,000	1,074,000	\$38.10
Toland Road	56-AA-0005	VRSD	1,500	468,000	\$23.00
			TOTAL	4,500	1,542,000

Note: Toland Road \$23.00 direct haul & \$18.00 transfer vehicles.

Abbreviations:

BFI	Browning Ferris Industries
Cal Mat	Cal Mat Properties
COI	County of Imperial
CSBWSD	County of San Bernardino Waste Systems Division
FH	Fredrick Holiday
FSOG	Four Star O&G
LACSD	Sanitation Districts of Los Angeles County
Mitsubishi	Mitsubishi Cement
Mont. Pac.	Monteney Pacific
MWD	Metropolitan Water District
NA	Not Available
OCOIMWMD	Orange County Intergrated Waste Management Department
Palmdale	Palmdale Disposal
RCWRMD	Riverside County Waste Resources Management District
Seagull	Seagull Sanitation
SLS & N, Inc.	SLS & N, Inc.
USG	United States Government
VRSD	Ventura Regional Sanitation District
WM	Waste Management

Existing Class III landfills, SCAG area:	105,298 t/d	20,913,541 tons
Existing Inert Unclassified landfills, SCAG area:	19,710 t/d	6,149,520 tons
Existing Transformation Facilities, SCAG area:	3,240 t/d	616,600 tons

Data Sources (Table I)

Imperial County Facilities -- Preliminary Draft Imperial County Countywide Siting Element, May 1996.

Los Angeles County Facilities -- Preliminary Draft Los Angeles County Countywide Siting Element, January 1996 (Table 1, Listing of Solid Waste Landfills and Transformation Facilities, has been updated to October 1996).

Orange County Facilities -- Final County of Orange Countywide Siting Element, February 1995.

Riverside County Facilities -- Final Draft Riverside County Siting Element, September 1996.

San Bernardino County Facilities -- Final Draft San Bernardino County Countywide Siting Element, March 31, 1995.

Ventura County Facilities -- Final Draft Ventura County Countywide Siting Element, November 21, 1995.

Tipping and Host Fee Data -- Initial survey August 1995, updated as of October 1996.

Table II
Capacities of Solid Waste Landfills
and Transformation Facilities

Land fill/Transformation Facilities	Maximum Permitted		Permitted Capacity (tons)	Daily in 1995 (tons)	Proposed Expansion Capacities		Estimated Life (yrs.)
	Daily Tonnage	Yearly			(tons/day)	(tons)	
Imperial County (existing Class III landfills)							
Brawley ¹	68	21,216	11	233,376	50		
Calexico ²	70	117	19	2,223	70		
Holtville ³	19	5,928	11	65,208	57		
Hot Spa Cut ⁴	1	110	90	9,900	1		
Niland ⁵	1	260	87	22,620	1		
Ocotillo ⁶	1	2	80	160	1		
Palo Verde ⁷	1	260	88	22,880	1		
Picacho ⁸	20	5,200	20	104,000	6		
Republic/El Centro ⁹	250	84,506	35	2,957,710	314		
Salton Sea ¹⁰	1	156	14	2,184	1		
Worthington ¹¹	29	7,540	30	226,200	14		
Total	<u>461</u>	<u>125,295</u>		<u>3,646,461</u>	<u>516</u>		
Imperial County (proposed Class III landfills)							
Mesquite Regional Landfill ¹²					<u>20,000</u>	<u>600,000,000</u>	
Los Angeles County (existing Class III landfills)							
Antelope Valley ¹	1,400	436,800	4.9	2,128,000	553	1,800	6,400,000
Azusa ²	NA	NA	NA	NA	1,587		
BKK ³	NA	NA	NA	NA	9,786		
Bradley West ⁴	10,000	3,120,000	3.4	7,637,000	4,064		
Brand Park ⁵	90	26,400	21	591,000	28		
Burbank ⁶	240	62,400	87	6,359,000	132		
Calabasas ⁷	3,500	1,085,000	22	15,060,000	2,159		
Chiquita Canyon ⁸	5,000	1,560,000	1	1,878,000	1,389	5,000	18,300,000
Lancaster ⁹	1,000	312,000	1.5	472,600	596	1,700	10,500,000
Lopez ¹⁰	NA	NA	NA	NA	2,968		
Pebble Beach ¹¹	33	10,100	3	26,752	8		
Puente Hills ¹²	13,200	3,744,000	8	29,328,000	10,157	12,000	37,000,000

Table II (Continued)
Capacities of Solid Waste Landfills
and Transformation Facilities

Land fill/Transformation Facilities	Maximum Permitted					Proposed Expansion Capacities (tons/day)	Extended Life (yrs.)
	Daily	Yearly	Life (yrs.)	Permitted Capacity (tons)	Daily in 1995 (tons)		
<u>Los Angeles County (existing Class III landfills)</u>							
San Clemente ¹³	4.8	480	100	154,000	2	12,000	37,000,000
Savage Canyon ¹⁴	350	109,200	32	2,662,000	232		10
Scholl Canyon ¹⁵	3,400	1,054,000	22	10,910,000	1,448	3,400	6,000,000
Spardra ¹⁶	3,700	780,000	2.7	2,117,000	2,222		6
Two Harbors ¹⁸	NA	NA	NA	NA	0.4		
Sunshine Canyon ²⁸	6,600	2,059,200	14	16,900,000	NA	11,000	75,000,000
Total	<u>48,518</u>	<u>14,359,580</u>		<u>96,223,352</u>	<u>37,331</u>	<u>46,900</u>	<u>190,200,000</u>
<u>Los Angeles County (existing transformation facilities)</u>							
Commerce Refuse-Energy ¹⁹	1,000	145,600	NA	NA	329		
Southeast Resource Recovery ²⁰	2,240	471,000	NA	NA	1,506		
Total	<u>3,240</u>	<u>616,600</u>		NA	<u>1,835</u>		
<u>Los Angeles County (existing unclassified inert landfills)</u>							
Azusa Land Reclamation Company ²¹	6,500	2,028,000	13	26,500,000	0		
Nu-Way Live Oak ²²	6,000	1,872,000	10	18,000,000	NA		
Peck Road Gravel Pit ²³	1,210	377,520	27	10,070,000	360		
Reliance Pit #2 ²⁴	6,000	1,872,000	9	16,560,000	1,410		
Total	<u>19,710</u>	<u>6,149,520</u>		<u>71,130,000</u>	<u>1,770</u>		
<u>Los Angeles County (potential Class III landfills)</u>							
Blind Canyon ²⁵					16,500	130,000,000	25
Elsmere Canyon ²⁶					16,500	80,000,000	15.5
Mission/Rustic/Sullivan ²⁷					16,500	125,000,000	44
Towsely Canyon ²⁸					16,500	225,000,000	
Total					<u>66,000</u>	<u>560,000,000</u>	
<u>Orange County (existing Class III landfills)</u>							
Frank Bowerman ¹	8,500	1,842,000	29	53,418,000	4,685		
Olinda Alpha ²	10,400	3,745,400	24	37,945,200	4,982		
Prima Deshecha ³	4,000	1,228,000	42	51,576,000	1,231		
Santiago Canyon ⁴	7	2,000			2,000		
Total	<u>22,907</u>	<u>6,817,400</u>		<u>142,939,200</u>	<u>12,898</u>		

Table II (Continued)
Capacities of Solid Waste Landfills
and Transformation Facilities

Land fill/Transformation Facilities	Maximum Permitted					Proposed Expansion Capacities (tons/day)	Extended Life (yrs.)
	Daily	Tonnage Yearly	Life (yrs.)	Permitted Capacity (tons)	Daily in 1995 (tons)		
Riverside County (existing Class III landfills)							
Anza ¹	40	12,360	2	24,720	29		
Badlands ²	1,400	432,600	15	6,489,000	318	4,000	20,000,000
Blythe ³	260	80,340	38	3,052,920	76		
Coachella ⁴	2,000	618,000	1	618,000	476		
Desert Center ⁵	16	5,840	17	99,280	3		
Edom Hill ⁶	1,200	370,800	11	4,078,800	546	2,651	709,000
El Sobrante ⁷	4,000	1,236,000	10	12,360,000	1,347	10,000	108,000,000
Highgrove ⁸	2,700	834,300	0	0	767		
Lamb Canyon ⁹	1,900	587,100	11	6,458,100	443	0	12,500,000
Mead Valley ¹⁰	1,100	339,900	2	679,800	661	0	0
Meca II ¹¹	50	15,450	5	77,250	28	0	0
Oasis ¹²	41	12,669	24	304,056	26		
Total	14,707	4,545,359		34,241,926	4,720	16,651	141,209,000
Riverside County (proposed Class III landfills)							
Eagle Mountain ¹³						20,000	730,000,000
San Bernardino County (existing Class III landfills)							
Agua Mansa ¹	400	120,000	45	5,400,000	10		
Apple Valley ²	253	77,924	8	623,392	87		
Baker ³	10	2,080	47	97,760	1		
Barstow ⁴	350	108,150	16	1,730,400	114	350	1,800,000
Big Bear ⁵	250	77,250	4	309,000	89		
California Street ⁶	350	65,000	2	130,000	250		
Cushenberry ⁷	40	8,000	0	0	40		
Colton ⁸	2,500	640,000	5	3,200,000	767		Undetermined
Fort Irwin (U.S. Army) ⁹	80	8,300	93	771,900	24		
Hesperia ¹⁰	308	110,572	5	552,860	139		Undetermined
Holiday ¹¹	0	0		0	1		
Iron Mountain ¹²	1	100	10	1,000	1		

Table II (Continued)
Capacities of Solid Waste Landfills
and Transformation Facilities

Land fill/Transformation Facilities	Maximum Permitted					Proposed Expansion Capacities (tons/day)	Extended Life (yrs.)
	Daily	Tonnage Yearly	Life (yrs.)	Permitted Capacity (tons)	Daily in 1995 (tons)		
<u>San Bernardino County (existing Class III landfills), continued</u>							
Landers ¹³	381	117,729	11	1,295,019	64	400	2,200,000
Lenwood-Hinkley ¹⁴	110	22,880	138	3,157,440	28		
Mid Valley ¹⁵	4,000	1,224,000	4	4,896,000	808	4,000	23,000,000
Milliken ¹⁶	35,000	1,081,500	4	4,326,000	1,302		
Morongo Valley ¹⁷	200	416,000	2	832,000	30		
Oro Grande ¹⁸	287	57,500	0	0	195		
Phelan ¹⁹	198	60,984	8	487,872	62		
San Timoteo ²⁰	1,000	306,000	20	6,120,000	403	4,000	4,000,000
Trona-Argus ²¹	88	22,616	7	158,312	11		
Twentynine Palms ²²	176	54,384	16	924,528	55		
Twentynine Palms, USMC ²³	48	0	0	0	15		
Victorville ²⁴	660	236,940	3	712,800	257	660	4,500,000
Yermo ²⁵	15	180	0	0	15		
Bolo Station ²⁶						21,000	487,000,000
Victor Valley ²⁷	750	150,000	20	0	0	750	2,250,000
	<u>47,455</u>	<u>4,968,089</u>		<u>35,726,283</u>	<u>4,768</u>	<u>31,160</u>	<u>524,750,000</u>
<u>Ventura County (existing Class III landfills)</u>							
Simi Valley ²	3,000	1,074,000	10	10,740,000	1,064		
Toland Road ³	1,500	14,000,000	31	15,000,000	145		
	<u>4,500</u>	<u>15,074,000</u>		<u>25,740,000</u>	<u>1,209</u>	<u>0</u>	<u>0</u>

Table II (Continued)
Capacities of Solid Waste Landfills
and Transformation Facilities

Land fill/Transformation Facilities	Maximum Permitted		Permitted Capacity (tons)	Daily in 1995 (tons)	Proposed Expansion Capacities	
	Daily	Yearly			(tons/day)	(tons)
<u>Class III landfills for SCAG area:</u>	138,548	45,889,723	338,517,222	61,443	200,711	2,746,159,000
<u>Inert Unclassified landfills:</u>	19,710	6,149,520	71,130,000	1,770	0	0
<u>Transformation facilities:</u>	3,240	616,600	NA	1,835	0	0
Total Solid Waste Volume:	161,498	52,655,843	409,647,222	65,048	200,711	2,746,159,000

Restrictions and Assumptions (Table II)

Imperial County Facilities

1. No limits on waste origin.
2. No limits on waste origin.
3. No limits on waste origin.
4. No limits on waste origin.
5. No limits on waste origin.
6. No limits on waste origin.
7. No limits on waste origin.
8. No limits on waste origin.
9. No limits on waste origin.
10. No limits on waste origin.
11. No limits on waste origin.
12. No limits on waste origin.

Los Angeles County Facilities

1. Antelope Valley - No limits on waste origin; 434 vehicles per day maximum per SWFP; remaining life assumes 6 days per week disposal.
2. Azusa Land Reclamation - Facility's Class III portion ceased disposal of non-inert solid waste in October 1996.
3. BKK - Facility closed in September 1996.
4. Bradley - No restrictions on waste origin; a revised SWFP for an increase in daily permitted disposal capacity from 7,000 tpd to 10,000 tpd was concurred on by the CIWMB on July 30, 1996; the remaining life assumes 7,000 tpd, six days per week.
5. Brand Park - Limited to use by the City of Glendale; remaining life assumes 5 days per week disposal.
6. Burbank - Origin of waste limited to the City of Burbank and collected by City services; remaining life assumes 6 days per week disposal.
7. Calabasas - Origin of waste is limited to that generated in the Calabasas Wasteshed as defined by Los Angeles County Ordinance #91-0003; remaining life assumes 6 days per week disposal.
8. Chiquita Canyon - No restrictions on waste origin; remaining life assumes CUP expiration on 11/24/97.
9. Lancaster - No limits on waste origin; remaining life assumes 6 days per week disposal.

10. Lopez Canyon - Facility closed in July 1996.
11. Pebble Beach - No restrictions on waste origin; remaining life assumes six days per week disposal.
12. Puente Hills - Accepts waste from all Los Angeles County's jurisdictions, except a portion of the City of Los Angeles outside the jurisdictional boundary of the LACSD; the facility's permitted tonnage is limited to 72,000 tons per week; remaining life is based on the November 2003 expiration of the facility's land use permit.
13. San Clemente - Limited to use by the U.S. Navy; remaining life assumes 12.5 tons per month disposal.
14. Savage Canyon - Origin of waste limited to that generated in the City of Whittier per city ordinance; remaining life assumes 6 days per week disposal.
15. Scholl Canyon - Origin of waste is limited to that generated in the Scholl Canyon Wasteshed as defined by City of Glendale Ordinance #4780; remaining life assumes 6 days per week disposal.
16. Spadra - Accepts waste from all Los Angeles County's jurisdictions, except a portion of the City of Los Angeles outside the jurisdictional boundary of the LACSD; the facility's permitted tonnage is limited to 15,000 tons per week; remaining life assumes 2,500 tons per day, six days per week.
17. Sunshine Canyon - No restrictions on waste origin; facility was permitted in 1995 but didn't became operational until August 1996; facility permitted tonnage is limited to 36,000 tons per week; remaining life assumes 6 days per week disposal.
18. Two Harbors - Facility closed in September 1995.
19. Commerce Refuse-to-Energy - Facility requires high energy content fuel; permitted capacity of 467 tpd-6, based on SWFP limit of 2,800 tpw, expressed as a daily average, six days per week.
20. Southeast Resource Recovery Facility - No limits on waste origin; permitted capacity of 1,510 tpd-6, based on SWFP limit of 471,000 tpy, expressed as a daily average, six days per week.
21. Azusa Land Reclamation - No limits on waste origin; remaining life assumes 6 days per week disposal, inert waste only.
22. Nu-Way Live Oak Landfill - No limits on waste origin; became permitted as an unclassified landfill in June 1996; remaining life assumes 6 days per week disposal.
23. Peck Road Gravel Pit - No limits on waste origin; remaining life assumes 6 days per week disposal.
24. Reliance Pit #2 - No limits on waste origin; facility limited to 150 vehicles per day; remaining

life assumes 6 days per week disposal.

25. Blind Canyon - The Mountains Recreation and Conservation Authority owns about 140 acres within the proposed landfill footprint; most of the remainder of the site is included in an agreement between landowners and the Authority for ultimate use as regional parkland.
26. Elsmere Canyon - The Omnibus Parks and Land Management Act of 1996, which was enacted in late 1996, prohibits the transfer of Angeles National Forest lands (by exchange or otherwise) for the use as a solid waste landfill. Previously, a draft EIR was prepared for a fill area which included Angeles National Forest area. Projected capacity of 80 million tons is outside the Angeles National Forest.
27. Mission/Rustic/Sullivan - Site is located within the Santa Monica Mountains National Recreation Area and current National Park Service Rules would preclude its development as a public landfill; the City of Los Angeles would need to grant a land use permit to use the site as a landfill, and the City has historically opposed development at this location for various reasons.
28. Towsley Canyon - Property transactions by the Santa Monica Mountains Conservancy have reduced its disposal capacity and additional acquisitions are being considered; a Special Use Permit would be required from the U.S. Department of the Interior, National Park Service, if the access road to the site is routed across Santa Monica Mountains Conservancy lands.

Orange County Facilities

1. Limited to Orange County waste only, unless specifically authorized by County Board action; Orange County has signed a 5-year contract (from 1/1/96 through 12/31/2000) and a 10-year contract (from 1/1/96 through 12/31/2005) with Waste Management of California and Cal San & BLT Industries, respectively, for disposal at this site of waste originating from outside Orange County; Permit provides for a 1.75 percent annual increase in tonnage from the 6,000 tpd permitted in 1989 to a maximum of 8,500 tpd.
2. Limited to Orange County waste only, unless specifically authorized by County Board action; Orange County has signed a 10-year contract (from 1/1/96 through 12/31/2005) with Taormina Industries, respectively, for disposal at this site of waste originating from outside Orange County; application submitted to combine landfill permit with Olinda Alpha and increase capacity.
3. Limited to Orange County waste only, unless specifically authorized by County Board action; application submitted to combine landfill permit with Olinda and increase capacity.
4. Limited to Orange County waste only, unless specifically authorized by County Board action; the 1979 permit has no maximum limit; CEQA allows for 4,000 tpd; sewage sludge is limited to 85 tpd. Reduced operations since 7/1/93 accepting a yearly maximum of 2,000 tpy.
5. Reduced operations since 7/1/93 accepting a yearly total of 2000 tons (2000 tpy).

Riverside County Facilities

1. Only Riverside County waste accepted; remaining life assumes 6 days per week disposal.
2. Only Riverside County waste accepted; remaining life assumes 6 days per week disposal and that the landfill will receive 50% of Highgrove waste beginning 11/1996, 50% of Meade Valley waste beginning 3/1997, 100% of Coachella waste beginning 10/1996, 100% of Mecca II waste beginning 1/2000, 100% of Edom Hill waste beginning 7/2006, and 100% of Oasis waste beginning 7/2019; if wastestreams from Coachella and Mecca II landfills are not diverted to the Badlands landfill, the estimated closure may be the year 2014.
3. Only Riverside County waste accepted; remaining life assumes 6 days per week disposal and that the landfill will receive 100% of Desert Center waste beginning 2/2012. of
4. Only Riverside County waste accepted; remaining life assumes 6 days per week disposal.
5. Only Riverside County waste accepted; remaining life assumes 7 days per week disposal.
6. Only Riverside County waste accepted; remaining life assumes 6 days per week disposal; if wastestreams from Coachella and Mecca II landfills are diverted to the Edom Hills landfill, the estimated closure may be the year 2002.
7. Memorandum of understanding between County and Western Waste Industries allows for 60% of the capacity of the landfill to be available for out-of-county waste; no out-of-county waste can be received from jurisdictions not found in compliance with AB 939; out-of county waste delivery must be contracted for; Draft Siting element does not assume out-of-county capacity or use; remaining life assumes 6 days per week disposal; estimated that landfill will receive 50% of Highgrove waste beginning 11/1997 and 50% of Meade Valley waste beginning 3/97.
8. Only Riverside County waste accepted; remaining life assumes 6 days per week disposal.
9. Only Riverside County waste accepted; remaining life assumes 6 days per week disposal; estimated that landfill will receive 100% of Anza waste beginning 11/1997.
10. Only Riverside County waste accepted; remaining life assumes 6 days per week disposal; if a Materials Recovery Facility is built in the Perris/Moreno Valley area no later than 9/1996, the estimated closure date of the Meade Valley landfill may be extended one year.
11. Only Riverside County waste accepted; remaining life assumes 6 days per week disposal.
12. Only Riverside County waste accepted; remaining life assumes 6 days per week disposal.
13. No limits on waste origin; Mine Reclamation Corporation has proposed to guarantee limited disposal capacity to Riverside County and its Cities.

San Bernardino County Facilities

1. No limits on waste origin; remaining life assumes 6 days per week.

2. No limits on waste origin; remaining life assumes 6 days per week; this facility to be replaced by a transfer station when the landfill closes.
3. No limits on waste origin; remaining life assumes 4 days per week; this facility to be replaced by a transfer station when the landfill closes in 2005 or earlier.
4. No limits on waste origin; remaining life assumes 6 days per week.
5. No limits on waste origin; remaining life assumes 6 days per week; this facility to be replaced by a transfer station or Material Recovery Facility prior to landfill closure.
6. Only City of Redlands waste accepted; remaining life assumes 6 days per week.
7. Only accepts Mitsubishi Cement waste.
8. No limits on waste origin; remaining life assumes 5 days per week.
9. Only accepts Ft. Irwin US Army waste.
10. No limits on waste origin; remaining life assumes 7 days per week; this facility to be replaced by a transfer station prior to landfill closure.
11. Only accepts construction and demolition waste from Frederick N. Holiday customers.
12. Only accepts mixed municipal waste from Metro Water District pumping station employees.
13. No limits on waste origin; remaining life assumes 6 days per week.
14. No limits on waste origin; remaining life assumes 6 days per week; this facility to be replaced by a transfer station prior to landfill closure.
15. No limits on waste origin; remaining life assumes 6 days per week.
16. No limits on waste origin; remaining life assumes 6 days per week.
17. No limits on waste origin; remaining life assumes 4 days per week; this facility to be replaced by a transfer station prior to landfill closure.
18. Only accepts Oro Grande Cement waste.
19. No limits on waste origin; remaining life assumes 6 days per week; this facility to be replaced by a transfer station prior to landfill closure.
20. No limits on waste origin; remaining life assumes 6 days per week.
21. No limits on waste origin; remaining life assumes 6 days per week; this facility to be replaced by a transfer station prior to landfill closure.

22. No limits on waste origin; remaining life assumes 6 days per week.
23. Only accepts Twentynine Palms US Marine Corps waste.
24. No limits on waste origin; remaining life assumes 7 days per week.
25. No limits on waste origin; remaining life assumes facility open only 1 day per month; facility to be replaced by a community collection center prior to landfill closure.
26. No limits on waste origin; up to 6,000 tons per day of waste capacity will be set up for San Bernardino County, enough to handle the entire county's waste stream.
27. Plans to limit waste to San Bernardino County generators.

Ventura County Facilities

2. No limits on waste origin, remaining life assumes 6 days per week.
3. Only Ventura County trash, direct haul only from Santa Paula and Fillmore, all remaining trash must be by transfer vehicles from MFFs, remaining life assumes 6 days per week.

Data Sources (Table II)

Imperial County Facilities – Preliminary Draft Imperial County Countywide Siting Element, May 1996.

Los Angeles County Facilities – Preliminary Draft Los Angeles County Countywide Siting Element, January 1996.

Orange County Facilities – Final County of Orange Countywide Siting Element, February 1995.

Riverside County Facilities – Final Draft Riverside County Siting Element, September 1996.

San Bernardino County Facilities – Final Draft San Bernardino County Countywide Siting Element, March 31, 1995.

Ventura County Facilities – Final Draft Ventura County Countywide Siting Element, November 21, 1995.

Table III
Existing & Proposed Waste-by-Rail and Truck-Haul Facilities

	Project	Location	Proponent	Access (Rail or Truck)	Size	Daily Capacity	Total Capacity	Estimated Life	Proposed Start Date	Proposed Tipping Fee (per ton)
In-Region	Bolo Station (Rail-Cycle)	San Bernardino County	WMX and Atchison, Topeka, and Santa Fe Railway Co.	Rail	4,800 acres	3,000 tpd start-up 21,000 tpd max.	430 million tons	60 to 100 years	1999	\$41 to \$60
	Eagle Mountain	Riverside County (60 miles NE of Indio)	Mine Reclamation Corp.	Rail & Truck	2,262 acres	3,500 tpd start-up 20,000 tpd max.	700 million tons	78 years	1998	\$18.05 for Riverside Co. \$20.55 for other counties
	El Sobrante	Riverside County (7 miles S of Corona)	Western Waste Inds. (USA Waste)	Truck	90 acres (585 acres proposed)	4,000 tpd start-up 10,000 tpd max.	8 million tons (108 million tons proposed)	10 years (+ 30 years proposed)	operational	\$30
	Mesquite Regional (California RailFill)	Imperial County (38 miles E of Brawley)	Western Waste Inds. (USA Waste), So. Pac. & Gold Fields Mining Corp.	Rail	4,322 acres	4,000 tpd start-up 20,000 tpd max.	600 million tons	100 years	1997	not available
Out-of Region	Butterfield	Arizona	WMX	Truck (+ future Rail)	447 acres	unlimited	44 million tons	not available	operational	\$14.50
	Campo	San Diego County	Campo Band of Mission Indians and Muht-Hel, Inc.	Rail & Truck	600 acres	3,000 tpd	28 million tons	30 years	not available	\$22 to \$26
	Cocopah	Arizona (near Yuma)	South Station & Sanifill (USA Waste)	Truck	300 acres	10,000 tpd	not available	30 years	operational	not available
	Columbia Ridge	Oregon	WMX	Rail & Truck	2,000 acres	unlimited	60 million tons	40 years	operational	\$27
	Copper Mountain	Arizona	Sanifill (USA Waste)	Truck	320 acres	150 tpd	14.5 million tons	50 years	operational	\$17 to \$27
	East Carbon Canyon	Utah	Laidlaw (merger with Allied Waste pending)	Rail	2,400 acres	30,000 tpd	260 million tons	30 years	operational	\$40 to \$60
	Franconia	Arizona	WMX	Rail & Truck	120 acres	unlimited	10 million tons	10 years	permitted but not built	not available
	La Paz County	Arizona	La Paz County & BFI	Rail	97 acres (640 acres proposed)	unlimited	20 million tons (80 million tons proposed)	not available	operational	\$14 to \$18
	Lockwood	Nevada (near Reno)	Refuse, Inc.	Truck (+ future Rail)	1,500 acres	3,500 tpd start-up unlimited max.	200 million tons	200 years	operational	\$10
	Roosevelt	Washington	RaBanco	Rail (80%) & Truck (20%)	1,050 acres	4,000 tpd start-up 3 million tpy max.	120 million tons	40 years	operational	\$19

Data Sources (Table III)

1. Initial survey by P.F. Ryan Associates, July 1996.
2. Updated by Los Angeles County Public Works Department, October 1996.

Table IV
Existing and Forecasted Yearly
Solid Waste Quantities

WASTE GENERATION (TONS PER YEAR)

Year	Los Angeles	Orange	Riverside	San Bernardino	Ventura	Imperial	Total
1995	15,329,359	5,260,452		2,099,495	1,077,535	856,839	24,625,675
1996	15,726,813	5,313,056		2,137,006	1,093,698	866,362	25,138,931
1997	16,002,526	5,365,660		2,175,578	1,110,103	876,019	25,531,883
1998	16,262,256	5,418,264		2,213,092	1,126,755	885,814	25,908,179
1999	16,405,678	5,470,868		2,251,560	1,143,656	895,747	26,169,508
2000	16,742,087	5,523,474		2,282,746	1,160,811	905,823	26,616,941
2001	17,102,214	5,549,434		2,340,808	1,178,223	916,045	27,088,725
2002	17,407,134	5,575,516		2,395,419	1,195,896	926,414	27,502,381
2003	17,733,877	5,601,721		2,449,122	1,213,835	936,934	27,937,492
2004	18,041,168	5,628,049		2,504,218	1,232,042	947,607	28,355,088
2005	18,329,961	5,654,501		2,591,342	1,250,523	958,438	28,786,770
2006	18,623,831	5,681,077		2,644,745	1,269,281	960,429	29,181,369
2007	18,915,815	5,707,778		2,699,256	1,288,320		28,613,176
2008	19,205,724	5,734,605		2,754,897	1,307,645		29,004,879
2009	19,493,143	5,761,557		2,811,693	1,327,260		29,395,662
2010	19,777,664	5,788,639		2,869,667	1,347,169		29,785,149

WASTE DIVERSION (TONS PER YEAR)

Year	Los Angeles	Orange	Riverside	San Bernardino	Ventura	Imperial	Total
1995	3,832,340	1,315,088		516,015	269,383	378,857	1,164,255
1996	4,718,044	1,604,418		594,419	273,424	382,530	1,250,373
1997	5,600,884	1,893,780		674,170	277,525	386,244	1,337,939
1998	6,504,902	2,183,078		724,646	338,026	389,999	1,452,671
1999	7,382,555	2,472,408		819,851	457,462	393,796	1,671,109
2000	8,371,044	2,761,737		914,736	580,405	397,635	1,892,776
2001	8,551,107	2,774,717		940,099	589,111	401,518	1,930,728
2002	8,703,567	2,787,758		964,655	597,948	405,444	1,968,047
2003	8,866,939	2,800,860		988,297	606,917	409,415	2,004,629
2004	9,020,584	2,814,024		1,013,770	616,021	413,431	2,043,222
2005	9,164,981	2,827,250		1,056,019	625,261	417,493	2,098,773
2006	9,311,916	2,840,538		1,139,671	634,640	421,601	2,195,912
2007	9,457,908	2,853,889		1,231,139	644,160		1,875,299
2008	9,602,862	2,867,303		1,331,192	653,822		1,985,014
2009	9,746,572	2,880,778		1,440,674	663,630		2,104,304
2010	9,888,832	2,894,319		1,560,512	673,584		2,234,096

Table IV (Continued)
Existing and Forecasted Yearly
Solid Waste Quantities

WASTE DISPOSAL (TONS PER YEAR)

<u>Year</u>	<u>Los Angeles</u>	<u>Orange</u>	<u>Riverside</u>	<u>San Bernardino</u>	<u>Ventura</u>	<u>Imperial</u>	<u>Total</u>
1995	11,497,000	3,945,364	1,266,346	1,583,480	808,151	163,371	19,265,707
1996	11,008,769	3,708,638	1,267,243	1,542,587	820,273	166,344	18,515,850
1997	10,401,642	3,471,880	1,268,176	1,501,408	832,577	169,385	17,647,065
1998	9,757,354	3,235,186	1,269,147	1,488,446	788,728	172,494	16,713,353
1999	9,023,123	2,998,460	1,270,156	1,431,709	686,193	175,672	15,587,312
2000	8,371,044	2,761,737	1,283,378	1,368,010	580,405	178,923	14,545,497
2001	8,551,107	2,774,717	1,309,045	1,400,709	589,111	182,248	14,808,938
2002	8,703,567	2,787,758	1,335,226	1,430,764	597,948	185,647	15,042,912
2003	8,866,939	2,800,860	1,361,931	1,460,825	606,917	189,125	15,288,600
2004	9,020,584	2,814,024	1,389,169	1,490,448	616,021	192,682	15,524,932
2005	9,164,981	2,827,250	1,416,953	1,535,323	625,261	196,320	15,768,093
2006	9,311,916	2,840,538	1,445,292	1,505,074	634,640	206,031	15,945,497
2007	9,457,908	2,853,889	1,474,197	1,468,117	644,160		15,900,278
2008	9,602,862	2,867,303	1,503,681	1,423,705	653,822		16,053,381
2009	9,746,572	2,880,778	1,533,755	1,371,019	663,630		16,197,763
2010	9,888,832	2,894,319	1,564,430	1,309,155	673,584		16,332,330

OUT-OF-COUNTY EXPORTS (TONS PER YEAR)

<u>Year</u>	<u>Los Angeles</u>	<u>Orange</u>	<u>Riverside</u>	<u>San Bernardino</u>	<u>Ventura</u>	<u>Imperial</u>	<u>Total</u>
1995	52,000			174,703	146,597		321,300
1996				171,825	148,795		320,620
1997				168,595	151,027		319,622
1998				165,031	143,073		308,104
1999				159,186	124,474		283,660
2000				148,707	105,284		253,991
2001				153,068	106,863		259,931
2002				157,413	108,466		265,879
2003				161,881	110,093		271,974
2004				165,720	111,745		277,465
2005				169,701	113,421		283,122
2006				173,054	115,122		288,176
2007				176,473	116,849		293,322
2008				179,960	118,602		298,562
2009				183,517	120,382		303,899
2010				187,144	122,186		309,330

Table IV (Continued)
Existing and Forecasted Yearly
Solid Waste Quantities

OUT-OF-COUNTY IMPORTS (TONS PER YEAR)

Year	Los Angeles	Orange	Riverside	San Bernardino	Ventura	Imperial	Total
1995	774,000	1,464,500			43,200		43,200
1996					39,000		39,000
1997					39,000		39,000
1998					39,000		39,000
1999					39,000		39,000
2000					39,000		39,000
2001					39,000		39,000
2002					39,000		39,000
2003					39,000		39,000
2004					39,000		39,000
2005					39,000		39,000
2006					39,000		39,000
2007					39,000		39,000
2008					39,000		39,000
2009					39,000		39,000
2010					39,000		39,000

EXCESS/SHORTFALL IN PERMITTED CAPACITY (TONS/YEAR)

Year	Los Angeles	Orange	Riverside	San Bernardino	Ventura	Imperial	Total
1995		135,857,711	17,616,006	19,562,099.00	6,429,996	15,403,769	21,833,765
1996	6,937,008	131,912,347	16,348,763	18,191,336.00	5,781,674	15,125,974	20,907,648
1997	848,640	128,203,709	15,080,587	16,858,523.00	5,079,722	14,843,101	19,922,823
1998	707,928	124,731,829	13,811,440	15,535,108.00	4,370,749	14,555,036	18,925,785
1999	596,544	121,496,643	12,541,284	14,262,584.00	3,654,688	14,261,663	17,916,351
2000	(637,104)	118,498,183	11,257,906	13,043,282.00	3,316,200	13,962,861	17,279,061
2001	(1,231,152)	115,736,446	9,948,861	11,795,641.00	2,777,970	13,658,507	16,436,477
2002	(1,364,064)	112,961,729	8,613,635	10,522,290.00	2,234,358	13,348,476	15,582,834
2003	(1,506,960)	110,173,971	7,251,704	9,223,346.00	1,685,310	13,032,637	14,717,947
2004	(5,385,130)	107,373,111	5,862,535	7,898,618.00	1,130,771	12,710,858	13,841,629
2005	(5,515,848)	104,559,087	4,445,582	6,532,996.00	570,687	12,383,003	12,953,690
2006	(7,516,080)	101,731,837	3,000,290	5,964,350.00	(12,941)	12,048,932	12,035,991
2007	(7,643,688)	98,991,299	1,526,093	5,944,811.00	(602,405)		(602,405)
2008	(7,770,360)	96,137,410	22,412	5,924,721.00	(1,197,763)		(1,197,763)
2009	(7,895,784)	93,270,107	(1,511,343)	5,904,064.00	(1,799,075)		(1,799,075)
2010	(8,019,960)	90,389,329	(3,075,773)	5,882,826.00	(2,406,400)		(2,406,400)

Data Sources (Table IV)

Imperial County Facilities -- Preliminary Draft Imperial County Countywide Siting Element, May 1996.

Los Angeles County Facilities -- Preliminary Draft Los Angeles County Countywide Siting Element, January 1996 .

Orange County Facilities -- Final County of Orange Countywide Siting Element, February 1995.

Riverside County Facilities -- Final Draft Riverside County Siting Element, September 1996. (Updated to January 1997, waste generation figures not computed only waste disposal numbers are used.)

San Bernardino County Facilities -- Final Draft San Bernardino County Countywide Siting Element, March 31, 1995.

Ventura County Facilities -- Final Draft Ventura County Countywide Siting Element, November 21, 1995.

Table V
Listing of Large Volume Transfer Stations
and Material Recovery Facilities

Average Tonnage

Facility	Location	Owner	Daily (tons/day)	Yearly (Tons/year)
<u>Imperial County Transfer Stations</u>				
Ocotillo	Ocotillo	COI	8	1,045
		Total	<u>8</u>	<u>1,045</u>

Los Angeles County Transfer Stations

**For Los Angeles County list of transfer stations and material recovery facilities
see Tables VI-a and VI-b**

Ventura County MRF's without Rail

GCR&T Inc.	City of Ventura	Gold Coast	440	137,720
GCR&T Inc. Expansion	City of Ventura	Gold Coast	760	237,880
		Total	<u>1,200</u>	<u>375,600</u>

Ventura County MRF's with Rail

Del Norte Regional Recycling		2,779	869,827
	Total	<u>2,779</u>	<u>869,827</u>

Orange County Transfer Stations

City of Newport Beach	Newport Beach	OCOIWMD	300	93,000
		Total	<u>300</u>	<u>93,000</u>

Orange County MRF's without Rail

Sunset Environmental	Irvine	Sunset Environ.	745	233,185
Orange Resource Recovery	Orange	Orange Resource	1,500	469,500
Rainbow Recycling	Huntington Beach	Rainbow Recyc.	1,500	469,500
CR Transfer	Stanton	CR Transfer	1,800	657,000
CVT	Anaheim	CVT	4,168	1,517,200
CVT proposed expansion	Anaheim	CVT	8,000	2,496,000
		Total	<u>17,713</u>	<u>5,842,385</u>

Table V (Continued)
Listing of Large Volume Transfer Stations
and Material Recovery Facilities

Facility	Location	Owner	Average Tonnage	
			Daily	Yearly
			(tons/day)	(Tons/year)
Riverside County Transfer Stations				
Coachella Valley	Coachella Valley	NA		0
Agua Mansa	Agua Mansa	NA		0
Mid Valley	Lamb Canyon	RCWRMD		0
City of Perris	Perris	CRR	500	130000
	Total		<u>500</u>	<u>130,000</u>
Riverside County MRF's				
Moreno Valley	Moreno Valley	WMS	400	104000
Burtec Recycling	Riverside	WMS		0
Waste Mgt of the Desert	Palm Desert	WMD		0
	Total		<u>400</u>	<u>104,000</u>
San Bernardino County Transfer Stations				
Heaps Peak	Running Springs	CSBSWMD	300	92100
Camp Rock	Lucerne Valley	CSBSWMD	14	4382
West Valley	Fontana	KRB		0
Ontario	Ontario			0
	Total		<u>314</u>	<u>96,482</u>
San Bernardino County MRF's				
Advance	Hesperia	AD	200	62600
Victor Valley	Victorville	BWI	200	62600
West Valley	Fontana	KRB		0
Western Waste	Chino	WWI		0
City of Barstow	Barstow	DI		0
City of Colton	Colton	COC		0
City of San Bernardino	San Bernardino	CSBSWMD		0
	Total		<u>400</u>	<u>125,200</u>

Table V (Continued)
Listing of Large Volume Transfer Stations
and Material Recovery Facilities

Abbreviations:

AD	Advance Disposal
AWS	American Waste Systems
BFI	Browning Ferris Industries
BLT	BLT Enterprises
BWI	Burrtec Waste Industries
CBH	City of Beverly Hills
CCC	City of Culver City
CD	Crown Disposal
COI	County of Imperial
COI	City of Industry
CSBSWMD	County of San Bernardino Solid Waste Management Department
CSM	City of Santa Monica
GCR&T Inc.	Gold Coast Recycling and Transfer Inc.
KRB	Kaiser Resources/Burrtec
LACSD	Sanitation Districts of Los Angeles County
LWS	Laidlaw Waste Systems
NA	Not Available
OCOIMWMD	Orange County Integrated Waste Management Department
RC	Rail Cycle
RCWRMD	Riverside County Waste Resources Management District
VRSD	Ventura Regional Sanitation District
WM	Waste Management
WTR	Waste Transfer & Recycling
WWI	Western Waste Industries
DD	Desert Disposal
WMS	Waste Management Systems
CRR	CR&R
WMD	Waste Management of Desert

Table VI-a
Existing Large Volume¹ Transfer Stations
In Los Angeles County

Facility	Location	Operator	Rail Access	Use Restrictions	Permitted Tonnage (tons/day)
American Waste Systems Action Transfer Center ²	1449 W. Rosecrans Ave. Gardena	American Waste Systems	no	none	2,225 tpd
Angelus Western Paper Fibers MRF/Transfer Station ²	2474 Porter Street Los Angeles	General Recycling Services	no	none	650 tpd
BFI Recycling and Transfer Station	2509 W. Rosecrans Ave. Uninc. LA County	Browning Ferris Industries	no	none	1,500 tpd
Bel-Art Waste Transfer Station ²	2501 East 68th St. Long Beach	Bel-Art Environmental	no	none	1,500 tpd
Beverly Hills Refuse Transfer Station	9357 W. Third St. Beverly Hills	City of Beverly Hills	no	limited to the City of Beverly Hills	250 tpd
Central LA Recycling and Transfer Station ²	2201 Washington Blvd. Los Angeles	Browning Ferris Industries	no	none	4,025 tpd
City Rubbish Company Material Recovery Facility ²	1511 Fishburn Avenue Uninc. LA County	City Rubbish Company	no	limited to operator's vehicles only	200 tpd
Community Recycling and Resource Recovery, Inc. ²	9147 De Garmo Avenue Los Angeles	Crown Disposal	no	none	1,200 tpd
Culver City Transfer/Recycling Station ²	9255 West Jefferson Bl. Culver City	City of Culver City	no	none	500 tpd
Falcon Refuse Center Transfer Station ²	3031 E. I Street Los Angeles	BKK Corporation	no	none	1,850 tpd
Haig's Disposal Company Material Recovery Facility	357 West Compton Bl. Uninc. LA County	Haig & Haig Inc.	no	limited to operator's vehicles only	500 tpd

Table VI-a (cont'd)
**Existing Large Volume¹ Transfer Stations
 In Los Angeles County**

Nu-Way Industries Transfer Station ²	400 East Live Oak Ave. Irwindale	Nu-Way Industries	no	none (construction debris only)	68 tpd
Paramount Resource Recycling Facility	7230 Petterson Ln. Paramount	Paramount Resource Recycling	no	none	1,200 tpd
Perdomo & Sons Transfer Station ²	1512 N. Bonnie Beach Pl. Uninc. LA County	B&W Investments	no	limited to operator's vehicles only	120 tpd
Santa Monica Transfer Station	2500 Michigan Ave Santa Monica	City of Santa Monica	no	none	400 tpd
South Gate Transfer Station	9530 S. Garfield Ave. South Gate	County Sanitation Districts of LA County	no	none	1,000 tpd
Southern California Disposal Recycling/Transfer Station ²	1908 Frank Street Santa Monica	Southern California Disposal	no	none	1,056 tpd
Waste Recovery and Recycling Facility ²	4489 Ardine Street South Gate	Waste Recovery & Recycling	no	none	500 tpd
Western Waste Industries Transfer Station ²	18803 S. Main St. Carson	Western Waste Industries	no	none	2,800 tpd
Waste Transfer & Recycling Mission Road Transfer Station ²	840 South Mission Road Los Angeles	Waste Management, Inc.	no	none	1,500 tpd

Note:

¹ Large Volume is defined as 100 cubic yards (approx. 30 tons) per day or more

² Facility is expected to have the capability to recover 5% or more of the solid waste received.

Table VI-b
**Proposed Large Volume¹ Transfer Stations
In Los Angeles County**

Facility	Proposed Location	Proponent	Rail Access	Use Restrictions	Expected Permitted Tonnage (tons/day)
Cal-MRT Materials Recovery Facility/ Transfer Station ²	9821 Downey-Norwalk Rd. Downey	Calsan Inc.	no	none	1,500 tpd
United Waste Recycling & Transfer MRF ²	14048 E. Valley Blvd. Industry/Uninc. LA Co.	Athens Disposal Company	no	limited to operator's vehicles only	1,920 tpd
Pomona Materials Recovery Facility ²	2000-2200 Pomona Bl. Pomona	City of Pomona	yes	none	6,000 tpd
Puente Hills Materials Recovery and Rail Loading Facility ²	adjacent to the Puente Hills Landfill, Uninc. LA County	County Sanitation Districts of LA County	no	none	4,000 tpd
Rail-Cycle Solid Waste Station ²	Commerce	Rail-Cycle, L.P.	yes	none	4,200 tpd
Scholl Canyon Materials Recovery Facility ²	Scholl Canyon Landfill Glendale	County Sanitation Districts of LA County	no	limited to jurisdictions in Scholl Cyn. wasteshed	275 to 825 tpd

Note:

¹ Large Volume is defined as 100 cubic yards (approx. 30 tons) per day or more

² Facility is expected to have the capability to recover 5% or more of the solid waste received.

U.C. BERKELEY LIBRARIES



C124917557

